ART

The MENTOR

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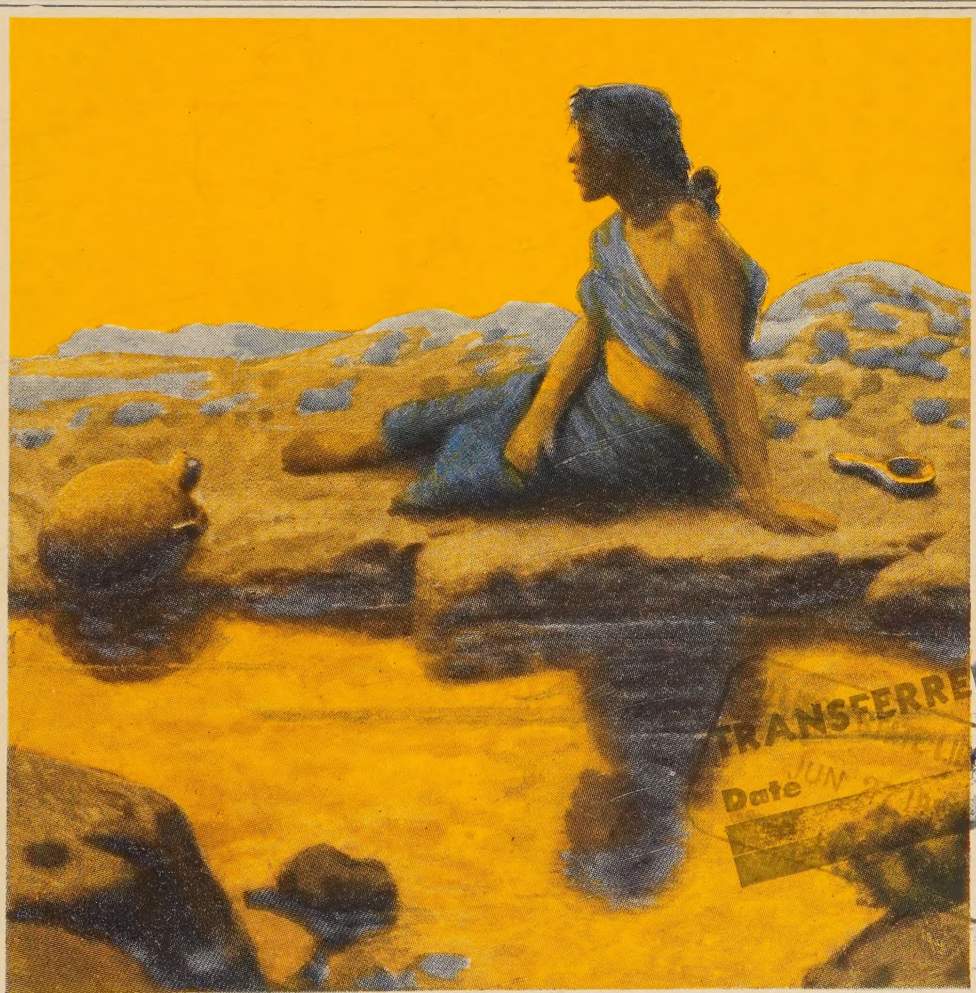
JULY 1924



THE WATER HOLE

W. R. Leigh

TRANSFERRED
Date JUN

LURE OF THE DESERT, BY VAN DYKE

PARK TO PARK HIGHWAY ILLUSTRATED

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GENERAL ELECTRIC

THE MENTOR, published monthly, on the first of the month, by The Crowell Publishing Company at Springfield, Ohio, U. S. A. Subscription, $4.00 a year in the United States and Canada; foreign postage, 50 cents extra. Single copies, 35 cents. Subscribers are notified that change of address must reach us five weeks in advance of the next day of issue. July, 1924, Serial No. 257. Entered as second-class matter at the post office at Springfield, Ohio, under the Act of March 3, 1879.

Date Due

"A MESSAGE TO GARCIA"

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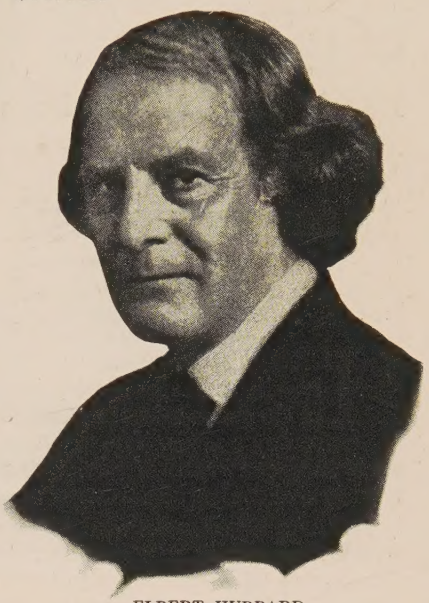
Where did Elbert Hubbard find the inspiration for carrying on his great work? It is no secret at East Aurora. It was derived from his own little pilgrimages to the haunts of the Great.



ELBERT HUBBARD

Little Journeys to the Homes of the Great

Fourteen years were consumed in the writing of the work that ranks to-day as Elbert Hubbard's masterpiece. In 1894 the series of "Little Journeys to the Homes of the Great" was begun, and once a month for fourteen years, without a break, one of these little pilgrimages was given to the world.

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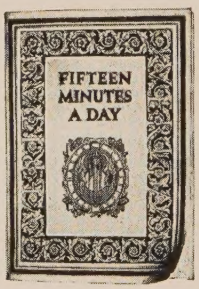

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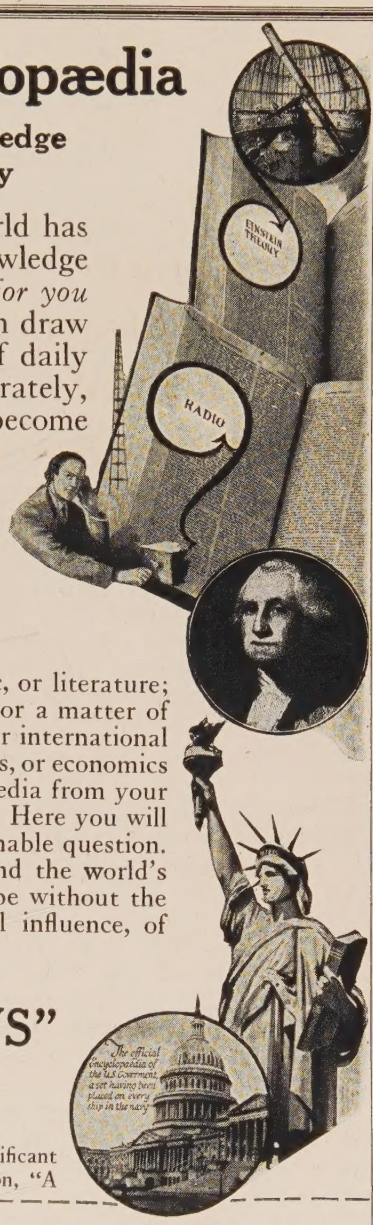

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Deserts.

INFORMATION FILE

THE AMERICAN DESERT

BY JOHN C. VAN DYKE

DESERT CACTUS—NEAR PHOENIX, ARIZONA

DURING two and a half years, off and on, John C. Van Dyke wandered, with horse and dog, over the deserts of the Southwest; and came to know, as few do, the ever-changing character of those vast wastes—their plateaus and mesas, gorges and canyons, grim mountains and expanding canopy of sky. In his story we not only see the beauty and austere splendor of the desert, but also feel the very spirit of it.

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"THROUGH THE GREASEWOOD"

A painting by E. Martin Hennings of a changeful scene familiar to desert travelers. Mr. Hennings is a member of the New Mexico group of artists who have perpetuated the life, the vegetation, the radiant atmosphere of the Southwest. Patches of prickly greasewood bushes growing from four to ten feet high send deep into the ground thick roots that store up moisture in the wet season and feed it slowly to the plant when no rain falls and the ground is parched for water

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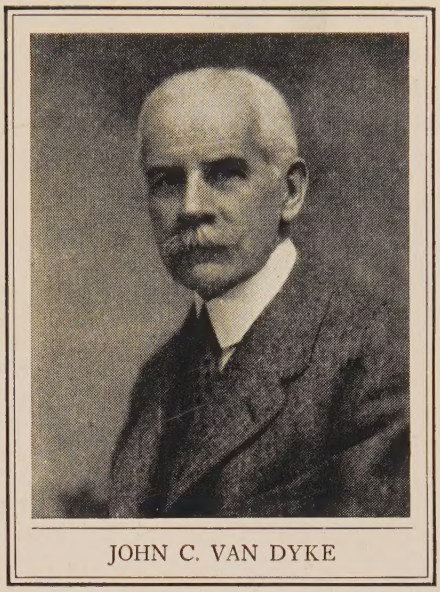


JOHN C. VAN DYKE

THE AMERICAN DESERT

BY JOHN C. VAN DYKE

AUTHOR OF "THE DESERT," "THE MOUNTAIN," "THE CANYON," "THE OPAL SEA"

I went alone into the desert with only a fox terrier and a buckskin pony for company. There was no one on the edge who knew about the interior, and those that talked as though they knew did not care to go with me. I was promised plenty of trouble. Predecessors had been "caught up with" again and again. Their bodies, dried like Egyptian mummies, had been found in the sands long after by Indians. The heat and the drought were unbearable, there were sand storms, sulphureous whirlwinds, poisonous springs, white gypsum wastes, bewildering mirages, desert wolves, rattlesnakes, tarantulas, hydrophobia skunks. I would never come out alive. But I went in, tempted Providence, off and on, for two and a half years, and still live to tell the tale.

After all, the dangers were not great. I had had, as a boy, considerable experience in Indian life and was not afraid of the open. And I had no fear of being alone or getting lost. My sense of direction was as keen as that of a homing pigeon, and when I was equipped with food and had located a water hole it really made no difference to me whether I was lost or found. I always knew my general direction, and with the ever-constant sun and stars I could not lose the points of the compass.

There are two ways of outfitting for a trip into the unknown. The one usually followed is to pack every article of plunder that might be thought desirable. That generally results in wearing out the most enduring pack train. I preferred the other way, the Indian way, of carrying very little, going light-shod, and retaining ease of movement. So, for myself, I wore nothing but a cotton shirt and trousers, a flat straw hat, and, on my feet, moccasins. I made my own moccasins, Sioux style, with a pointed toe, of strong mule-deer hide. A pair of blankets, a small hatchet, a short-handled shovel, some rawhide picket ropes, several tin cups, a small frying pan, a rifle for large game, and a .22-caliber single-barrel pistol for birds—

these made up the bulk of my pack. My food supply was not heavy, and the vital part of it was condensed. Its sustaining power was so great that a small sack of it would last me for weeks. It required no more preparation than mixing with a little water and eating as one would oatmeal. Besides this mixture I carried tablets of chocolate, dried figs, a little bacon, some flour, salt, tea, and a small bottle of saccharine. I relied on desert rabbits, quail, and doves for meat, and that source also supplied the dog. Food for the horse had to be picked up by the way, and was often a perplexing problem.

I started out with a desert-bred horse, as tough as an antelope and, where food was concerned, as cunning as a coyote. He picked a living where it might be thought a jack rabbit would starve to death. Always in the early spring in the desert there were patches of alfileria and bunch grass that sprang up quickly but soon withered and died. The desert winds broke the dry stalks, and they were dragged and blown against the roots of the creosote bush, or heaped about ant hills. This dried grass was the sole sustenance of the desert jack rabbit, and it served my horse as a main article of diet. But often we were in hot valleys or dry lake beds or gypsum wastes where little besides the creosote and salt bush grew, and there the horse found the cupboard quite bare.

We crossed such places very rapidly, and if we did not find feed in the valleys beyond we climbed into the desert mountains three or four thousand feet in search of the bunch grass or perhaps some twigs or barks in the

A RIVER OF LAVA — The surface of the sandy Mohave Desert is streaked with cracked and disintegrating streams of reddish-black lava, the remains of scorching torrents of prehistoric ages

DECEPTION OF THE DESERT — What seems to be a wide expanse of cool, refreshing water cupped in a valley close to the mountain is in reality the dry, parched bed of an evaporated lake

chaparral. The horse was not particular. He would often spend hours gnawing the bark from a sycamore or gleaning choke-cherries or manzanitas from the chaparral. And he lost no flesh on such feeding. As for water, he could go without it for a couple of days and would then be satisfied if I slashed into a *sahuaro* or *bisnaga* and let him eat the watery pulp of it; but he drank water like a camel when he got the opportunity. I quickly trained myself to go without any moisture for twelve hours, but when we struck a large water hole, horse, dog, and man drank to the saturation point.

Of course water was the scarcest article of all in the desert. I was never able to move from one supply until I had located and tested another. But after a few weeks I became very shrewd about finding water in unexpected places.

I found, for example, that some of the winter rainfall was pocketed high up in the mountain stream beds—pocketed in rock basins under dry waterfalls. The rock basin would be ten or a dozen feet in diameter, filled with sand and gravel, and offering to the casual glance not the slightest sign of water; but by digging into that sand and gravel four or five feet I would find water held there in the rocky bowl.

When I began digging in one of these gravel-filled basins the interest of the horse and dog seemed greater than my own. The dog watched the hole as though he expected rabbits to jump out of it, and the horse pushed forward with cocked ears and forefeet in the sand until I had to make the dog drive him off. They knew perfectly well I was digging for water. Frequently

at the bottom of the bowl I dragged out of little hollows and cracks small grains and flakes of gold. Under a small magnifying glass they showed quite plainly, but the total bulk of them was not great. I dreamed no dreams about them. I was not seeking gold. But it was there.

Sometimes the winter rainfall on the mountain tops would follow the ledges of rotten granite and drip or ooze out of a crack at the mountain base for perhaps months afterward. This water was usually clear and cool, and the temptation to camp beside it was too great to be resisted. I sometimes found these drips from the mountain bases by following the flight of the desert doves. The mourning dove, wherever he is, loves to drink. So whenever I was moving or hunting for water I kept watch for passing doves. If I found two or three pair in the course of an hour flying in the same direction, I took that direction, keeping a sharp lookout for any sign of green vegetation or bunched bushes or unusual mesquite.

Besides these water reservoirs I would occasionally find a deep pothole or cistern bored in the rock of the foothills by a revolving stone in early geologic days, and in this pothole would often be held a catch of greenish, unwholesome-looking water. Several times in emergencies I used this by cutting cactus lobes and putting them into it. That would clear the water, and, after boiling, I found it drinkable but not pleasant. Then, too, I occasionally found (by the grass growing about it) a spring that proved serviceable rising from somewhere under the desert floor. But I always accepted it with caution. I let the horse smell it over and drink it if he would. If he would not touch it, I let it alone. It was often brackish or blue with alkali or copper-tinctured; and the Indians declared it poisonous. But the horse knew more about it than the Indians. If there is one place more than another

SCARRED SURVIVORS OF THE STRUGGLE

Desert vegetation must not only adapt itself to the scarcity of moisture but must also protect itself from the hungry jaws of ravenous animals. Many desert plants have bitter saps and are armed with spines

COLOR—
THE DESERT'S
WEALTH

"Every color in the scale is attuned to the key of flame, every air wave comes with the breath of flame, every sunbeam falls as a shaft of flame. It is the kingdom of sun fire"

where animals are keen-witted and alive to danger, it is in the desert.

And abstemious. Everything native to the desert gets along with an irreducible minimum. In the matter of water, the horse, dog, and I, with the desert doves, were about the only life that drank at all. I never knew or saw any of the desert animals or birds (except the doves) drink water at any time. Sometimes I would camp by a desert drip for ten days and keep every animal away from it, but nothing ever seemed to suffer. The thermometer at ten o'clock would be one hundred and twenty in the shade, but coyotes, jack rabbits, ground squirrels, rock rats, horned larks, and desert quail would move about as usual. I am certain that the rabbits and ground squirrels and snakes and lizards never took water at any time and could live indefinitely without it. I have watched the lynx and the coyote circle water holes, looking for birds, but they would not drink. And I frequently found mule deer, mountain sheep, and antelope fifty miles from any known water hole.

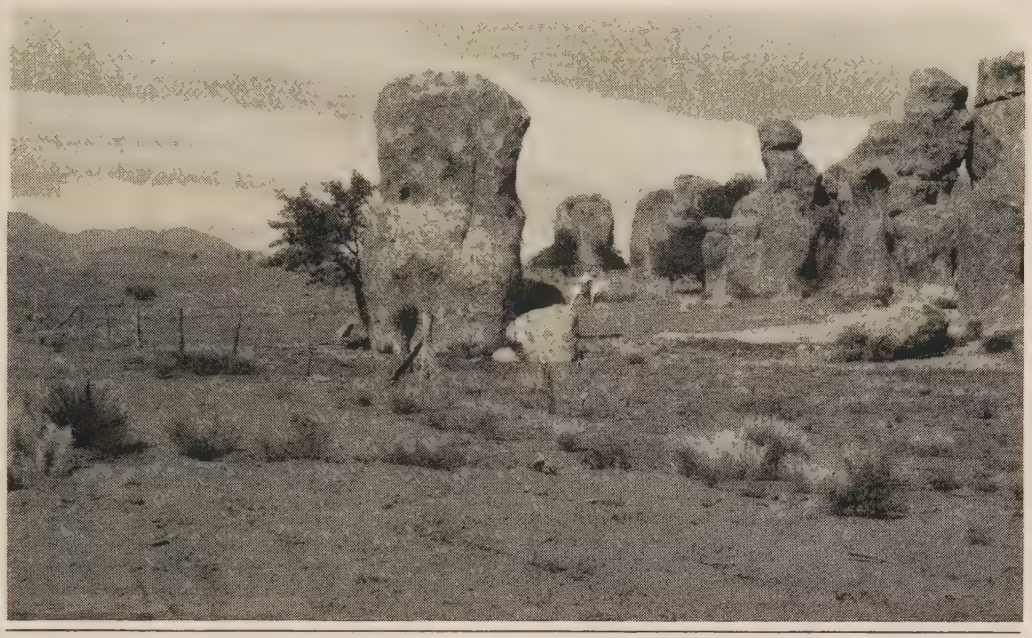
I never came anywhere near dying of thirst, though most of my desert traveling was done in the heat of summer. I kept a gallon of water in a canvas water bottle as a reserve supply. In case of disaster, with horse and dog dead, and left afoot and alone, I could, with that water, walk a hundred miles or more to the edge of the desert. Nothing but accident or illness could stop me. No illness came to me, and the horse and dog kept fit. In mountain climbing the horse was as nimble as a goat, and scarcely an escarpment that the terrier and I could take but the horse would follow after. He never grumbled, bucked, or strayed and had no notion of being left behind. We all three held together and pulled together. Almost always we made our night camp up in the mountains. It was cooler there, water and feed could be found, and the dry chaparral made excellent firewood. For the first ten

AS BARREN AS ✣ ✣ THE VALLEY OF THE KINGS

The shifting sand dunes in the Colorado Valley greatly resemble the sandy wastes of the Sahara. The floor of the southwestern American desert is not entirely of sand; parts of it are covered with gravel, while other sections are covered with soil that can be made productive only by irrigation

days I picketed and hoppled the horse for fear he would take his back track in the night and leave me; but he soon forgot about the ranch from which I took him. I then allowed him to run free, trailing a rope, and eventually took off even the rope. He showed no disposition to leave. In fact, he would often come into camp in the night to see that we were not giving him the slip. He would blunder in, nosing and smelling the dog and myself, much to the dog's disgust, who growled and grumbled about it.

Some nights the horse was nervous and apprehensive and could not be driven from the camp. He would stand with head up and ears cocked, snuffing the air and snorting. I well knew the keenness of scent in these half-wild horses and understood on such occasions that some grizzly bear or pack of wolves had been through there twenty-four hours before and left a taint upon the air. Both horse and dog kept watch such nights, and I slept without fear. Nothing in the desert would attack me, though a bear might make short work of horse or dog. Indeed, the only night affair we ever had was an attack by wolves upon the horse. He had strayed away, half a mile or more, in picking up bunch grass. It was a summer of great drought and scarcity of food, and I suppose the wolves were made desperate by hunger. At any rate, they winded the horse and sneaked pretty close to him before he was aware. When finally they jumped at him he made for the camp at full speed, with three swift gray shadows following close at his heels. The beat of the horse's hoofs roused me, and I caught up my rifle as he came toward camp. I could



FANTASTIC FORMS ✣ The sands of the desert driven before the burning winds have carved the granite rocks into weird, grotesque shapes. Slowly, under the spray of Nature's sand blast, these rocks are returning to the plain from which they rose

see the three shadows behind him, and shot quickly. The wolves turned at right angles and took down the mountain, one of them going on three legs and lagging behind. I shot again, but nothing dropped. The light was too dim for accurate aim. The horse ran a mile beyond the camp and then slowly worked back to us, snorting and stamping as he came nearer.

Camp was quickly made and quickly broken, for I had few things to pack or unpack. No tent or shelter was necessary, for there was no summer rain. I slept in the open, on a flat piece of ground. Dusk usually found me lying on the blankets with the saddle for a pillow, watching the fire-red of the high mountain peaks. Night after night they would glow with sky reflection like hot iron, and finally fade away in an ashes of roses; again, like hot iron cooling. I made many water colors of these mountain spires at sunset, but in the eastern country no one would believe in their truth of color. Just so with the midsummer sunsets, when the whole west would turn to a bright orange hue that spread from the horizon to the zenith and from extreme north to extreme south. They were unbelievable. I seemed not looking *at* a sunset, but actually *in* the sunset itself. I have never been able to determine whether animals recognized the different lights and colors in nature, but I was sure that the dog and horse with me recognized these orange glows. All three of us, standing side by side on some mountain height, would look to the west for many minutes at a time—the horse with head up and ears forward, the dog sniffing the air as though trying to smell the color.

When the light of peak and sky faded out, a deep night blue covered the sky, and upon this came out, one by one, the stars. The desert was always profoundly silent, but at night, in its great hush, it seemed part of the constellations. The call of a belated quail, the yap of a coyote, the far-off cry of a wolf seemed only to emphasize the stillness. The great moving universe overhead made no sound. And I could feel it move across me from east to west in the night. I came to know it so well, so like a chart, that whenever I woke I could tell the time by the position of the stars. My watch had been left behind, and time was no object to me at best, but still I was amused at the way one can fill a gap or supply a deficiency in case of need. Many a night I traveled with the horse and dog to avoid the heat of midday, laying my route by the moon and stars.

If ever a dreary feeling came to me up there alone in the mountains, it was dispelled by the first light of dawn. The sun in the desert always came up like thunder. It was a blaze of fire. The premonitory dawn was an upward spread of color even more wonderful than that of dusk. No one could think about himself with such a display covering the eastern heavens. At the first appearance of dawn I was up.

Saddled and packed, we took to the valleys, if we were traveling, and made haste in the early part of the day. By eight o'clock the sands were so hot that the terrier would creep under a creosote bush and refuse to travel. He howled in perfectly understandable howls that the sand burned his feet. I would lift him on the horse behind me, where he would stand crosswise of the horse with his back against my back and hold on even when the horse went at a hard gallop. At one time I made him some buckskin shoes, which I tied fast above his dewclaws with a buckskin thong, but he worried with

A VALLEY IN A DESERT ✣ The Mohave Desert was once the bed of a lake, but is now dry; the alkaline deposit discourages all but the sparsest vegetation

them and kept pulling them off. Before noon all three of us had been scorched enough and were glad to pause in the shadow of some rock or go up into the mountains on a water and feed hunt. Often I crept into some wind-worn cave, after evicting snakes and scorpions, and was glad to get a nap. Later in the afternoon I hunted mountain sheep or mule deer, or lay on the rocks and watched the flight of vultures, or drew water colors, or wrote descriptions of the geological formations.

DESERT VEGETATION
A species of the yucca, or Spanish bayonet, found in the Painted Desert by the author, who says, "I have never seen the like of it before or since"

What was I doing in the desert? Well, I certainly had not gone there to explore the land, name the mountains, and map the dry stream beds. I was not sent there by any newspaper or magazine to write up the country. No more was I a mining engineer, a land reclaimer, or a borax baron. I suppose, if the truth were plainly told, I had grown a bit weary of books, art, college, Europe—society and civilization in general. I longed for the wild and had a reversion to the savage. Besides, I was perhaps not very well and needed the open for recuperation. Once there I was not particular about my route or where I wandered. I kept no diary, made no map, claimed no discovery. The first summer is now only a memory of desert light, warm colors, lilac air, heliotrope shadows, fantastic mirages, flat dry lake beds, gypsum wastes, strange vegetation, stranger animals and reptiles.

I followed down the San Bernardino Range toward the Colorado River, crossing and recrossing again and again the Salton Basin. Imperial Valley was then not even dreamt of, and the basin was a silt sea-bed, as flat as a billiard table; and the only thing growing there was the salt bush. It was many feet below the level of the sea and so hot that not even a lizard, a horned toad, or a rattlesnake would live there. I found many trails in the soft silt—tracks of deer, wolves, coyotes—but they all ran straight, showing that the animals were merely crossing to the mountains and not stopping to hunt or feed. It was a deserted bowl in the waste—more desert than the

desert itself and, in some respects, like Death Valley, lying farther north on the Mohave.

I crossed the Mexican border without knowing it, and eventually came out on the lower reaches of the Colorado River, spending some time camped on its banks near the delta. I found some stray Indians thereabouts. They talked much sign language and were interested in tobacco and food, but were good-natured and quite harmless. They were curious to know what I was doing down there. Everyone I met in or about the desert looked me over as a suspect, a gold hunter, a searcher for that old Pegleg mine that had been found and lost so many times. When I turned up for supplies at border towns like Arivaca or Nogales or Torres, I was always asked whether I had found that mine.

Well, I did find an old abandoned mine down in Sonora, or rather a Yaqui Indian took me to it. The trail to it was roundabout and difficult. The mine was evidently his unique secret, and he did not wish it known. He rode a burro about as big as a great Dane dog, and descending that rocky trail the burro kept falling down. The Yaqui's feet were trailing on the ground, and he had not far to fall, so he would pick up the little burro, set him on his feet, and we would go on. The entrance to the tunnel was under the base of a huge mountain. I remember that we crept through mesquite

A WATCH TOWER IN THE DESERT — The Enchanted Mesa of Acoma, where the early Pueblo Indians built their homes high above the surrounding plain. From this altitude their lookouts were able to espy approaching enemies and spread the alarm

AMERICA'S SUBSTITUTE FOR THE CAMEL ✣

Roads have been built through most sections of the American desert country connecting the principal communities. Instead of the camels common to the deserts of the Old World, automobiles are used for transportation

and cacti grown about the mouth, and when we got into the tunnel the air was hot and sulphureous. I breathed with a handkerchief over my face, and the Indian held his nose.

The vast interior of that mountain seemed to be hollowed out. There were galleries everywhere, with mesquite ladders leading up and down, and great chambers that had been cut and caverned by the tools of Yaqui Indians or Mexican peons. Evidences of old blasting by lime and water, and the grinding of ores between heavy stones operated by burros were everywhere. It was the most primitive kind of mining, and probably not a quarter of the mineral had been taken away. But nothing had been worked or touched in a hundred years. The place was as silent as the interior of an Egyptian tomb—a weird, strange place that I have never forgotten, and yet could not find again if I tried. That is the lost Pegleg mine of it. The edge of the desert abounds with tales of mines once worked at great profit, then raided by Indians and everyone massacred, then forgotten, and finally "lost." Every prospector carries with him the hope that he will re-find one of those lost mines.

My desert wanderings were not all of a piece and continuous. During the winters I went to Guaymas and Hermosillo, lived in a house, became civilized, and "visited" the neighboring Mexican ranches. Even in summer

I never kept by myself in the open desert for more than six weeks at a time. Then I would put into some desert settlement for a few days, get supplies, patch up the outfit, shoe the horse, send and receive mail. In my second year I traveled much without the horse, going long distances afoot rather than bother with the recurrent feed and water problem. I did this by crossing the Colorado and Mohave deserts via the Southern Pacific and Santa Fé roads and stopping every thirty or forty miles at sidings where water cars were kept for locomotive supply. Often there would be only a siding with two or three tank cars and perhaps a section crew of one white and half a dozen Mexicans living temporarily under the cars. I would camp down with them or alone if necessary, and from that central base would explore the deserts on either side of the railway in thirty-mile circles.

I saw much that summer of lava beds, extinct volcanoes, mountain forms. I was some time in the Calico Mountains studying geological strata, faults, squeezes, mineral deposits, unearthly colors of sands and shales. I photographed old sea beaches, lake bottoms, alkali sinks, salt deposits, and made water-color drawings of the rose-colored air, the gas-blue mirages, the lilac-shadowed sand waves, the lavender mountains. It was a summer of intense heat, which brought out color in its weirdest manifestations. Never before or since have I seen such an opalescent world. Occasionally I would show my drawings to the Mexicans, or Americans who knew something of the desert. They would always smile and nod approval of the colors and say they were true; but no one from the Middle West or East would credit them for a moment. And heat—one hundred and twenty-seven in the shade—that was merely a fantastic tale. The sequel to it—the fifty-degree fall of the mercury between sunset and sunrise—was, of course, ridiculous. Yet night after night I fell asleep in the great heat only to wake before morning and start burrowing in the sand for warmth. The truth of the desert is much stranger than any fiction about it.

Aside from my studies in rock strata, I was interested in the physical geography of the desert—the old sea beaches, the valley floors, the wear-down of foothills. Everywhere earthquake, lava, fire, and flood had been at work; and again, and yet again, the desert winds had sent waves of sand to bury the wreckage. On the contrary, the shifting sands sometimes uncovered strange formations, and occasionally a cloud-burst of past years had so cut out a river bed that the roots of mesquite or *palo-verde* or greasewood were left exposed in amazing cross sections.

It was following down the dry bed of a lost river that first led me to study the means whereby plant life was able to sustain itself in the desert. I found at the start that the common creosote or greasewood, which grows a bush from four to ten feet above ground, had roots that went down in the sand some twenty or thirty feet and spread out in every direction. On cutting the roots I found that the bark was very thick, pulpy, and water-holding. Here was

From a painting by C. T. Cole

SENTINELS ✣ OF THE DESERT

"Barren rock and nothing more! . . . Rising as they do from flat sands, they give the impression of things deep-based—veritable islands of porphyry bent upward from a yellow sea. . . . Usually they assume a dull garnet-red, but occasionally at sunset they warm in color and look fire-red through the pink haze"

the reservoir that gathered and stored water in the wet season and fed it out slowly to the plant above ground in the dry season. The leaves were thin and small, they had a way of hanging edgewise to the sun to prevent evaporation, and they were shellacked or varnished so that not a drop of moisture could escape through them.

But strangest of all was the device of this bush to ward off browsing desert animals, such as deer and rabbits. The leaf held sap. To the taste it was violently acid and astringent. The Indians used it to cauterize bullet wounds or cuts. When swallowed it proved not only emetic but cathartic. It was poison. Not an animal on the desert would touch it. And there, with no rainfall for many months, with everything else about either dead or

DESERT CONTRASTS ✣ The low, scorching desert hemmed in by the high, snow-covered mountains. The automobile now goes everywhere, and the interior of a desert is no longer a place of mystery

withered, the creosote blossomed and spread its leaves and flourished. What shrewd adaptation to special conditions! Was not the plant acting from an intelligence of the same kind (though perhaps of less degree) as that of the animal and human?

I was much interested in this question. And here on the desert where peculiar conditions of hardship existed was the very place to study the expedients of both plants and animals. The long taproot was only one device. The wild gourd had a reservoir like an enormous turnip; another plant, the name of which I never knew, had a half-wooden bulb, looking like a hornet's nest, that also was a water holder; and many were the reservoirs above ground. All the cacti in lobe and joint and stem were merely masses of pulp that fed the flower and ripened the fruit. The tall fluted column of the *sahuaro*, sometimes thirty feet high, was a cylindrical cistern, and the *pitahaya*, the *cholla*, the *opuntia*, the *bisnaga* were variations of the cistern design. Of course they were protected. Every one of the growths had a bitter sap, and every one of them was armed with spines, thorns, sharp points. You could not touch them without being pierced. Even the baby grasses and pretty flowers that grew in the early spring were, in many instances, endowed with small spines that produced a red rash on the hand. Everything on the desert had to be fortified or it would quickly perish; for of all places on earth it was the one of savage conflict. The struggle for existence there was fierce, the conditions were exacting, hence the development of peculiar character through conflict and the strong impulse to survive.

All this was perhaps less obvious in the plants than in the reptiles, the

birds, and the mammals. The plant could somehow defend itself by armor or sap or spine, but the birds and animals had to take the offensive to gain a living. Everything fought or fled or used strategy, and in the end every executioner became a victim. The birds were quite as fierce as the reptiles. The innocent-looking road runner caught and tossed the lizard with the same terrible certainty that he dodged and fought the sidewinder; the hawks and owls with great beaks and claws were eternally pouncing upon the rabbits and quail; and the eagles and condors kept harrying the young of the mountain sheep. Above the conflict circled the buzzard and the carrion crow, eager to finish anything left over, or, if need be, to wait patiently for the wounded to die.

From greater to less, down the line, the conflict continued. The kingbird and the bee catchers were not more murderous than the innocent-looking cactus wren. The scissors bill of the wren could snip through a butterfly quite as easily as the eagle could break the back of a rabbit. The enormous mouths of the swallows, bats, and whippoorwills were always open for any insect moving through the air. Every bird is normally hungry at all times, but on the desert the bird is abnormally hungry because of the limited supply. The eagerness and the fierceness of attack no doubt produced a cunning and a strength of attack that were peculiar to the desert. Even the songbirds like

DESERT HOMES — Scattered along the edges of the desert sections are clusters of Pueblo and Yuma Indian huts. It is said that the Indians of the Coahuila Valley can endure hunger and thirst for days at a time

ARID WASTE AND DESOLATION ✣ Typical of hundreds of square miles in the Southwest. The scarcity of moisture and the heat make the existence of plant and animal life a continuous struggle

the lark, or the seed-eating birds like the quail, developed extraordinary tenacity and endurance and died game at the last. The quail, if not killed outright by your shot, would run into a cactus patch or crawl down a squirrel hole and die just out of your reach.

The animals both great and small were of kin with the birds in fierceness and toughness. The cleverness of the desert deer, sheep, and antelope always seemed extraordinary to me. I marveled how, for instance, they could stampede across wide taluses of broken stone on a mountain side without even so much as scraping a dewclaw or twisting a pointed toe, or how they could run the mountains and deserts and evade the wolves. The pursuers were quite as cunning as the pursued. Long ago the old gray wolf found that deer and sheep disliked leaving certain localities, and that when startled they would run in wide circles about the home base. They could outrun him, but he found by starting a fresh wolf at given points on the circle he could tire out and finally drag down the quarry. I think he probably learned that much wisdom from his humble brother, the coyote. The coyote had invented the relay for outwitting the jack rabbit. It was useless to run straight after him, or try to stalk him or to catch him napping. The rabbit was too cute for such common expedients. But the relay running and the coming in of a fresh

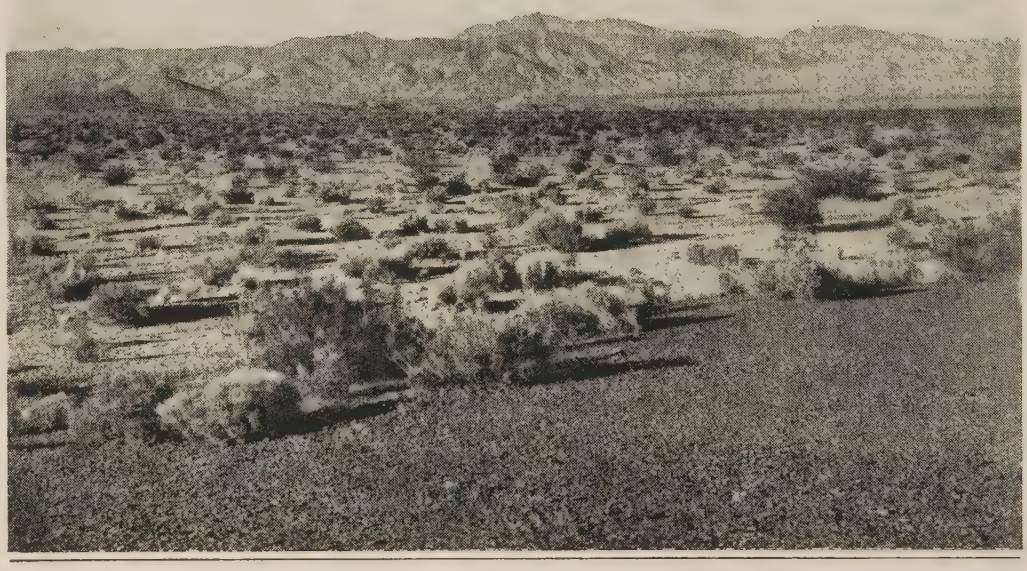
A LAND OF MILK AND HONEY

The magic influence of water. This photograph, taken at the same spot as the one on the opposite page, visualizes the transformation brought about by irrigation

coyote at a tangent often proved too much for him. The rabbit lost.

The cunning of the coyote is a wonder to everyone who knows him. He is more foxy than a fox, and many are the devices he has for gaining a living and keeping out of trouble. He is not brave, though he will fight fiercely if cornered; but his discretion is magnificent. He knows all about you and has looked you over long before you see him. Sitting motionless on some little hill, his dusty coat blends into the sand and rock so perfectly that your eye does not pick him up. He will sit there and watch you maneuver for an hour if convinced that you do not see him, but the moment your eye catches him he knows it and is off. His impudence is colossal, but so, too, is his shrewdness.

The wildcat, the lynx, and the mountain lion were quite as truly past masters of strategy in sneaking, crawling, and springing as the coyote. They all of them had wits sharpened because of rather empty stomachs. They could not afford to let anything get away from them. And that was the condition of the prey. It could not afford to get caught. So offense and defense were both speeded up. Every pursuit was swift, and every flight, if possible, was swifter. So the struggle went on, but life was somehow endured, and everything brought forth after its kind with no whit of energy or hope abated.



SUNRISE IN THE DESERT

"The colors are intense in chrome-yellows, golds, carmines, magentas, malachite-greens —a body of gorgeous hues upheld by enormous side wings of paler tints that encircle the horizon to the north and south"

Even the reptiles and the insects insisted upon surviving, no matter how gaunt the land or pitiless the circumstances. They were not endowed with spine armor, nor great fighting strength, nor swiftness in flight; but to many of them was given the most deadly weapon of all—poison. One naturally, at first, thinks of the rattlesnake as the chief of poison carriers. He is native to the desert, but in my wanderings I met with only a few of them. They were usually found on the ledges of the desert mountains. One day as I was descending a steep side of rock, and, thinking to save time and distance by dropping some ten feet upon a projecting ledge, I discovered, just before I dropped, that a large rattlesnake was occupying the ledge. I dropped a rock, instead of myself, upon him.

But such incidents were rare. I kept, however, a sharp lookout for rattlers, as did also the dog. He would shake and kill any kind of snake except a rattler. Instinctively he knew that poison lay there. Every animal on the desert knew as much, and gave the rattler a wide berth. Nor was there any interference with the tarantulas, trap-door spiders, centipedes, scorpions, wasps, and red and black ants. They were all poison bearers—the ant in degree being even more poisonous than the snake. Of course, they had

their conflicts among themselves. The great orange-winged tarantula wasp was always driving his sting into the back of some spider and carrying him off to his storehouse, the scorpions were continually pulling each other to pieces, and the ants had a standing quarrel with everything that came their way.

When added to by Gila monsters, lizards, and horned toads, the reptile family would seem to make up a rather savage crew; but I never was bitten by any of them, except once by a scorpion that had lodged in my moccasin overnight. Reptiles lent a grisly aspect to life in the waste, but then *that* was the desert of it. They were not fiercer after their kind than the inanimate things—the hot light, the scorching winds, the shifting sands, the alkali beds, the barren mountains. All nature wore a savage front on the desert. And yet it was tempered by an outer aspect of vast serenity and a beauty that was little short of sublime.

I have never seen greater pictorial beauty than the desert revealed. Every painter who has been there tells the same tale. It is a wonder of light, air, and color—at dawn and dusk an iridescent dream of splendor. All the pictures of it have proved merely compromises. You cannot squeeze out of a

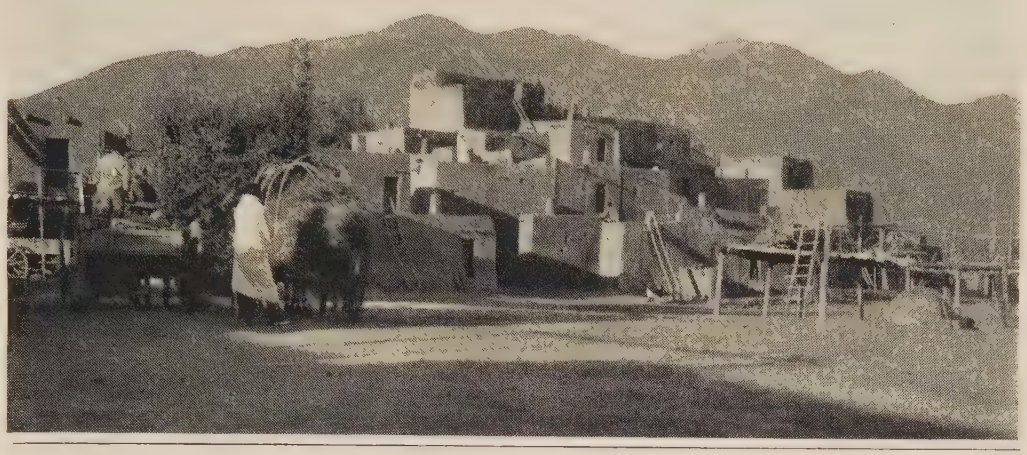
A DESERT ROAD ✣ Almost all geological ages are represented in the conglomerate rocky wastes of the desert. Shales, slates, syenite, and basalt are there; and over all a dusty white coating of carbonate of lime

tube such color as the desert produces even in its half-tones. As for the blazing light, the brightest paint will not come within seventy-five degrees of it. And no palette mixture can render the opalescent air, the heliotrope shadows, the violet sky-depths, except in feeble echo. Add to this the vast stretch of the desert, the reach of the flat valleys, the lift of the bare granite mountains, and you have the uniquely wonderful. Those grim mountains with their fire hues at dawn and dusk were the very essence of sublimity. They stood for foundation stones, they meant geological ages; through the colored air they looked like enchanted mountains, and in their silence they were strangely mysterious. I was always climbing their heights and looking down from their ramparts, as the followers of Emir Musa from the walls of the City of Brass.

I have had many loves in landscape—the tablelands of Montana, the prairies of Dakota, the Grand Canyon, the great sea—but the desert outlives them all. A savage face of nature, to be sure; but marked by strong lines of beauty and an unfading blaze of splendor. It is a land that one never forgets. Its grim mountains and gaunt valleys, with its desolation and vast silence, are things not to be forgotten.

"VOICE OF THE DESERT"

A painting by W. R. Leigh. The illustration reproduced on the cover is also the work of this artist. Mr. Leigh's success was achieved early in life. At the age of four he received a prize at a country fair for an animal silhouette which he had cut out of paper. He has painted portraits, and done much magazine and book illustrating. He now devotes most of his attention to making pictures of the Far West



AN ARTISTIC "FIND" ✣ American painters who discovered the Indian village of Taos have established a flourishing modern colony in the shadow of archaic walls

TAOS: AN ART CENTER ON THE EDGE OF THE DESERT ✣ ✣ ✣ ✣ ✣ ✣

HOW A GROUP OF AMERICAN ARTISTS HAVE MADE AN INDIAN VILLAGE FAMOUS

BY J. PENNINGTON

About twenty years ago, two New York artists, impatient with the futilities and limitations of city life, set out in a large covered wagon to cross the southwestern desert in search of their artistic fortunes. And the end, no less than the beginning, of their adventure, reads like a fairy story; for their search was crowned with success not only for themselves but for fellow artists who followed them. It befell these young wanderers that they came to Taos, not far from Santa Fé, the capital city of New Mexico; and in this little Mexican village, set amid the ruins of an ancient civilization, they found all that they were seeking. Here was color beyond the dreams of artistic avarice. Here were native models, Pueblo Indians—not the war-whooping, tomahawk-shaking, feather-crowned kind of Indians, but peaceable, dignified brown men who farmed the land and made pottery designed from and decorated with patterns found in the ruins of their ancestors' dwelling places. They were ideal models, these natives of the land of *poco tiempo*—the land of "pretty soon"—unhurried and unchanged by encroaching civilization, uninfluenced by the ways of the white men who dwelt among them.

As early as 1881 Montgomery Roosevelt, the portrait painter, a cousin of Theodore Roosevelt, had gone to Taos as a visitor; and there had been a few

A STUDIO IN A DESERTED CHAPEL

E. Irving Couse, a specialist in paintings of Indian life and crafts, does much of his work beneath the beams of an old New Mexican church. Mr. Couse is president of the "Taos Society of Artists," organized in 1914

others—Colin Campbell Cooper, Frederick Remington, and Henry R. Poor, the cattle and landscape painter. Poor had even written an article on the Pueblo at Taos. Then J. H. Sharp had found his way there; and to him belongs the credit of being the first of the present group to discover the painters' paradise of the Southwest.

The two artists—Ernest L. Blumenschein and Bert Phillips—found in Taos not only the primitive ways of life and art, the dream of every artist the world over; they found not only color so dazzling and so pure that it defies and eludes the brush; not only native models crowding about their very thresholds; but above all they found a simple, unrestrained, inexpensive, and unpretentious way of living. Even an artist, unpractical dreamer though he be, could build an adobe house according to the recipe given by Charles Fletcher Lummis in his "Land of Poco Tiempo:" "You merely flay your lawn, stand the epidermis on end, and roof it. That is the house—the most easily made of all houses—cool in heat and warm against cold." With such a roof over his head, a brush in his hand, a model peering in at the window, and the brilliant sun of the Southwest over all things, how could inspiration fail?

So these two artists unpacked their palettes and brushes and cooking utensils and settled down in Taos. So glowing were their accounts of the place that before long other artists came to see for themselves what had lured the two to a remote spot on the edge of the desert. Within a few years there was a definite group of painters either living at Taos or summering there—

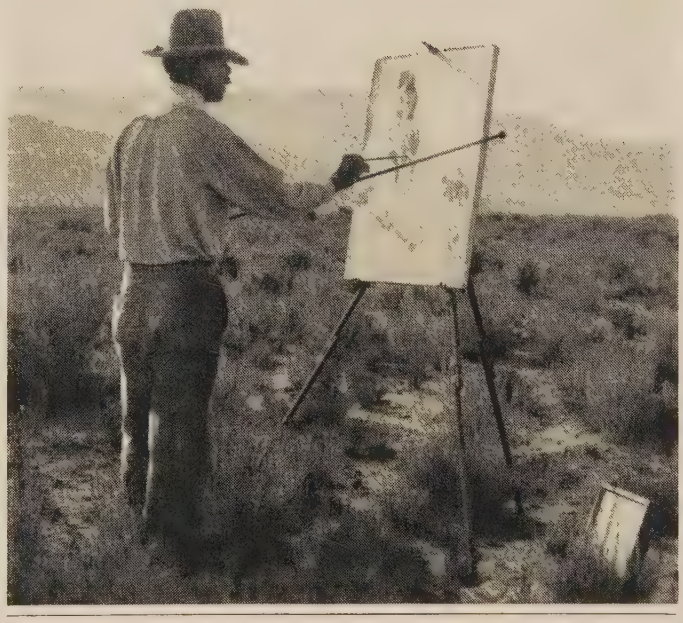
Walter Ufer, Victor Higgins, E. Irving Couse, W. H. Dunton, and many others. They organized the Taos Society of Artists and gave exhibitions of their work; and soon the whole country was speculating about Taos. What was it? Where was it? Who were there, and why did they go?

Perhaps no one but a painter can understand what it means to find such a refuge as this white-walled community on the rim of the desert. Not even Gaugin's South Sea Islands could furnish better possibilities in color, in subjects for composition, in themes of allegorical treatment than did the happy brown people, in their rich colorful setting. In all phases of their daily life the Pueblo Indians present pictures that by their rich variety of color and line, by the manifold implications of the ancient civilization that still persists in all they do, are at once the delight and the despair of the artists. Whether harvesting their crops by sunlight and moonlight; or engaged in their ceremonial dances to give thanks for the corn and the beans, the rain and the sun; or whether merely idling in the sun, the chief diversion in the land of "pretty soon;" they provide endless motifs from which the Taos painters weave exquisite harmonies of color and line.

There are, of course, Indians in other parts of the country; but the Pueblo Indians are unique in their resistance to the ways of the white man, in their strict adherence to tribal customs. Outwardly good church-going Catholics,

ARTIST AND MODEL

A representative type of Pueblo Indian in demand among the Taos painters displays his native finery



THE SKY IS DUNTON'S STUDIO ROOF
Indians and cowboys pose for him on the open plain

they remain pagans at heart and celebrate their pagan festivals as they have always done. These Pueblos have deliberately clung to their tribal traditions and customs, to the garments, crafts, and rituals of the ancient civilization from which they are sprung.

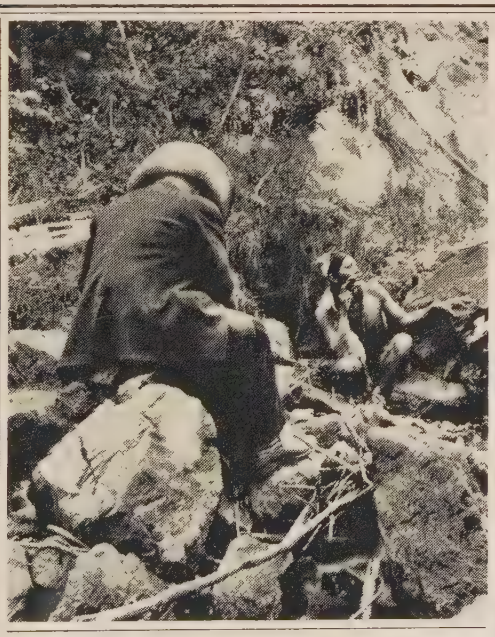
It is thanks to the Pueblo Indians, then, that the Taos artists have made it possible for Americans, in one instance at least, to live down their national curse of "newness." For it is from the fountainhead of a civilization older even than that of Europe that they draw their inspiration. No longer must the student seek out seats of ancient culture on the other side of the Atlantic. Here in his own country he may visit a shrine as worthy of his worship as any to be found in southern Europe. Here he will find color no less variable and enchanting than the colors of Italy; here are the survivors of an ancient race dwelling amid the ruins of their ancient habitations, ruins in which there is no less beauty, dignity, and nobility than in those of ancient Rome or Greece.

The little colony founded by Blumenschein and Phillips has outgrown its original home and spread over into Santa Fé; so that it is no longer enough to speak of the "Taos

WELCOME WATER IN THE DESERT

artists"—one must speak of the "New Mexican artists." But those who belong to the Taos group, it must be admitted, are ever so slightly scornful of the more sophisticated dwellers in the capital, because the latter demand the comforts of civilization—baths and street cars and automobiles. They feel ever so slightly superior to their neighbors in Santa Fé, because, seeking primitive life for the artist, they are willing to live in a primitive way in the adobe houses that boast no more modern convenience than perhaps a fireplace.

FOUNDERS OF THE COLONY
Blumenschein, Couse, Bert Phillips, and J. M. Sharp. The latter (wearing hat) was the first to come to the ancient village seeking a new kind of Indian model



INDIAN MODEL IN NATIVE SETTING

J. H. Sharp, for instance, made a studio of an abandoned Mexican adobe church, and, though he put in a new floor, he did so, he explained, merely "to keep the dead Penitentes down." (The Penitentes are members of a religious sect who discipline themselves by self-flagellation, and during Lent even crucify one of their number, in spite of the efforts of the Catholic Church to destroy the organization.) W. Herbert Dunton built himself in the Pueblo style a studio having a ladder by which one entered the upper story, just like the community houses of the Indians. Irving Couse lives in an old church, and Ernest L. Blumenschein has transformed one of these native mud houses into a low, flower-wreathed villa.

Albert Groll is the only one in the group who confines his work almost entirely to landscape. For some reason he has been able to resist the lure of the native Indian model; he has undertaken to put upon canvas the changing aspects of the desert—the effects of sunlight and rain upon the sand, the strange rock formations, and the sparse and prickly vegetation. Although William R. Leigh paints chiefly cowboys and Indians, he has chosen one or two desert scenes. It is said that he deplores, as well he may, the fact that nowadays so many of the cowboys go dashing about in "flivvers"!

As has been said, to this group of painters credit must be given for lifting to some extent the curse of "newness" that is so often placed upon American art and, incidentally, for giving a new impetus to the "See America First" movement. So famous has Taos become that almost everyone knows how to pronounce it (phonetically it approximates Towse, in one syllable), and every year scores of pilgrims, both laymen and artists, seek out the ancient village and pay their respects to this new shrine in an old setting. But in spite of curious visitors Taos is still completely untouched by civilization; it is still primitive, aloof, unspoiled, in spite of the "not at home" signs the artists are compelled to place on their doors to prevent interruption, and in spite of the fixed minimum wage for Indian models of fifty cents an hour. The old Taos pueblo still dominates the little village, symbol of the unchanging ways of the Southwestern Indian—"a strange, tragical place with its high, blank walls against the stranger."

AN ADOBE WORKSHOP — Home of Ernest and Mary Blumenschein. Their studio is a remodeled native hut. Mr. Blumenschein is secretary of the group called "The New Mexico Painters"

THE PAGEANT HIGHWAY

A 6,000-MILE RIDE FROM PARK TO PARK

BY RONNE C. SHELSÉ, U. S. GEOLOGICAL SURVEY,
DEPARTMENT OF INTERIOR, WASHINGTON, D. C.

Courtesy National Park Service

SETTING OUT FROM DENVER FOR THE PAGEANT RIDE

The Lariat Trail in Lookout Mountain Park, one of nine mountain parks owned and maintained by the city of Denver. Winding, as the name suggests, the trail leads up the mountain where William F. Cody ("Buffalo Bill") is buried, overlooking the plains he knew so well. Thousands of tourists pass over the road each year on their way to the Rocky Mountain National Park

A SIX-THOUSAND-MILE road that winds its ribboned length from Denver to Glacier Park, across to Seattle, down the coast to Los Angeles, over the Mohave Desert to the Grand Canyon, and back to Denver again: That is the "Pageant," or "National Park-to-Park Highway." This chain that encircles the far western states is set with twelve matchless jewels—twelve national parks that reveal more of Nature's splendor than is readily accessible anywhere else in the world. Each park has an individuality all its own. Towering mountain or canyon superb, placid lake, roaring stream, or splashing falls, seething geyser or giant tree—the traveler will find all these scenic wonders, and many others, in these great tracts of land that have been set aside for the enjoyment of the people.

The trip by auto, barring accidents, can be made easily and comfortably in ninety days. This allows time for sightseeing and "stop-overs" at various points. Any time from May to August, therefore, is a good time to start from Denver. We set off in the middle of June, when sun and sky are fairest and the rolling roads are at their best. We head north and drive abreast the Rockies. In three hours' time we turn into the eastern gateway to the Rocky Mountain National Park, with its four hundred square miles of snow-topped heights. We look down on quiet valleys dotted with lakes and tiny parks of pine and aspen and a profusion of wild flowers. This rugged country is the home of the bighorn sheep, powerful and agile beasts that plunge off dizzy heights and dance down ledges into the valley below. Then we go on to the Yellowstone. The highway leads down the Big Thompson Canyon, following the river of that name to the plains. We tarry a while at Cheyenne, rich in memories of the "Wild West." Farther on are Casper, the oil city; Thermopolis, with its hot springs; and Cody, named for "Buffalo Bill." On we go through the beautiful canyon of the Shoshone until we come to that amazing open-air museum of natural

Courtesy National Park Service

AN AFTERNOON REST AT THE CLUBHOUSE ON GRAND LAKE

Grand Lake, sapphire gem, on the western edge of the Rocky Mountain National Park, is one of the largest and most beautifully situated lakes in Colorado. It is one and one-half miles in length and nearly a mile in width, and its clear, cold water is of great depth. The lake lies at an elevation of 8,369 feet and claims the highest yacht club in the world. At the head of the lake, Mount Craig rises to a height of 12,005 feet. Amid this scenic grandeur visitors to the national park may rest or indulge in fishing, boating, horseback riding, or mountain climbing

wonders called "The Yellowstone." Here we find ourselves in the laboratory of a great cosmic alchemist and surrounded by vast evidences of his handiwork: canyons of exquisite coloring, gleaming white waterfalls, crystal-clear lakes, towering mountain heights, vast plateaus with marvelously tinted hot springs, iridescent terraces fantastically fashioned, and spouting geysers. We pick our way among steaming pools where Old Faithful and other volcanic fountains play at regular intervals, and little springs toss up their bubbling water. Then we walk out to Inspiration Point, a strip of land that projects itself almost to the center of the canyon, and view the spectacle of a gorgeous white waterfall nearly twice the height of Niagara. The spot is truly named, for it invokes a mood of inspiration in all observers. The Yellowstone is the greatest wild-animal preserve in the world, and so, of course, we must see the bears and deer and other creatures—especially the bears. The animals are so tame that they gather about the hotels or road camps and take food from the hand. The park ranger has already told us about the "hold-up" bear, and before we know it he appears in the road. He stops in front of the machine, and we slow down as he rises on his hind legs. He is begging, and we know what for. Each takes a turn at feeding him chocolate candy from the box. When he has got all the "loot" we can give him, he stands aside and waits for the next car.

Out of the Yellowstone by way of Gardiner, the northern exit, we hit the trail for Glacier National Park. Another long stretch is ahead, and we break it by stop-overs at Bozeman, site of the state college; Helena, the capital of Montana; and Great Falls, with its huge lighting and power plants. Finally we reach the vast reserve whose northern boundary parallels the line that separates the United States and Canada. The name suggests the chief characteristic of the scenery in Glacier Park. Millions of years ago, this part of the North American conti-

A VIEWPOINT WHERE TRAVELERS ALWAYS LINGER

Blue Bird Lake, in the Rocky Mountain National Park, lies in what is known as the Wild Basin, a name suggested by Enos Mills, famous naturalist, who loved its rugged grandeur. The lake is reached by a good trail up the North St. Vrain Creek from Allen's Park Village. This basin is fitted to become the camping ground of large summer throngs

nent, then under sea, was pushed upward by some mighty internal force and strung out in irregular, wave-like masses which to-day we call a mountain range. On these the snows and rains of uncounted centuries have fallen, and the ice and the waters have carved them into vast forms of astonishing beauty. Glistening, dazzling ice sheets or tranquil lakes that are the offspring of the glaciers lie in the great hollows between the peaks, and the rocks in the mountain masses, thousands of feet up, show broad horizontal bands of magnificently colored strata laid down by the seas in the forgotten past.

From Glacier we turn to the fourth of the jewel parks: Mount Rainier, in western Washington. This lap of the journey must also be broken by stays along the road at cities and towns. We visit Spokane, Seattle, then Tacoma. From there the cone of Mount Rainier can be seen snow-crowned and bulking majestically against the blue sky. In Rainier Park we find scenery that challenges the Alps. The peak of the mountain towers above the others in the Cascade Range. Half a hundred square miles of glaciers are there, too, with many individual ice streams from four to six miles long. And, incredible as it seems, this giant mountain was once a volcano, and is to-day, indeed, a dormant volcano, built up in the ages agone with the lavas thrown out by its own heat forces. We are in a region of contrasts. In the morning we complain of the heat in

Courtesy National Park Service — Photograph by Wisali Bros.

ICE AND SNOW IN SUMMER-TIME

A relic of the Ice Age, the perpetual snow bridge in the Rocky Mountain National Park spans the outlet stream to Blue Bird Lake. At certain times of the year the cavern is open, and one may pick his way, from rock to rock, through the stream

the valley; in the afternoon we are making snowballs on the upper slopes of the mountain. At Paradise Inn, nestling in the valley of the same name, we again hear the call of the road and start down the coast over the finest stretch of the highway. Glimpsing Olympia, Centralia, Portland, Salem, and all the other hustling towns, we catch the spirit of the Northwest. At Medford, Oregon, we swing the wheel around and drive east on the road that leads to Crater Lake Park, named for a loch of transcendent beauty. Nowhere else is there water of such unbelievable blue —turquoise, sapphire, Prussian blue. It fairly beggars description. It fills a crater which Nature made in a most uncommon manner. On the site a colossal volcano once stood, then fell in upon itself—an astounding scenic change in Nature's spectacular drama.

But we must go on. At about the state line we start up into the Siskiyou Mountains. Near Ashland is a bold rock, Pilot Knob, which stands more than six thousand feet above the sea and which in the earlier days guided emigrants to the pass to California. From Yreka on for about a hundred miles are the washed-out banks, reminders of '49, when men rushed to the coast in the mad scramble for gold. Redding, at the upper end of the Sacramento Valley, is the first town in the semi-tropical fruit country. Some fifty miles farther on is Red Bluff and the road to Lassen Park. This is the one place in the United States where there is any real volcanic action. Smoke and steam still occasionally rise out of the cone of the mountain. From Lassen we "make" Sacramento and the smaller towns along the highway, and at Vallejo cross an arm of the bay and come into Martinez, Berkeley, Oakland, and the other well-known cities of the Pacific coast. At Tracy we enter the famed San Joaquin Valley, pass through Stockton, noted for its grapes, and at Oakdale, where the valley ends, take up the last bit of road to the Yosemite National Park, the seventh master jewel in the chain. About a mile wide and eight miles long, the Yosemite Valley tells a deeply interesting geologic story of the wearing down and cutting away of rock by water and ice during millions of years, forming a beautiful vale through which the Merced River continues to pour its waters and wear its way. And, at various points high up on the summit-surfaces, streams, left at that level ages ago, pour over the brink of the valley in fairy waterfalls—Bridal Veil, Vernal, Nevada, and Illilouette falls, all enchanting in their separate ways, and, highest and most beautiful of all, Yosemite Falls, with its long and short leaps of water. And then we turn to the sheer sum-

mits. The floor of the valley is 4,000 feet above the sea, and from that the Cathedral Rocks rise 2,500 feet, El Capitan 3,604 feet, Sentinel Dome 4,157 feet, Half Dome 4,892 feet, and Clouds' Rest 5,964 feet, Nature's skyscrapers, we call them all. From the park area above the valley's rim comes the song of the Tuolumne River. Descending sharply to the head of the Hetch Hetchy Valley, now a reservoir for San Francisco's water supply, this plunging stream is described by a famous naturalist as "one wild, exulting, onrushing mass of snowy purple bloom spreading over glacial waves of granite without any definite channel, gliding in magnificent silver plumes, dashing and foaming through huge boulder dams, leaping high in the air in wheel-like whirls, displaying glorious enthusiasm, tossing from side to side, doubling, glinting, singing in exuberance of mountain energy."

We drive on through wonderful farming country to the Sequoia and General Grant national parks, areas set aside by Congress to preserve California's big trees. In the Giant Forest stands the General Sherman Tree, the oldest and largest thing that lives. It is 36 feet in diameter and 286 feet high. Scores of others are there almost as large, hundreds over ten feet in diameter, and many thousand sequoias in the seedling stage and upward.

The road from Sequoia leads out of the farming country a little beyond Visalia. Then follow Tulare and half a dozen smaller towns, then Bakersfield and the great oil districts. Just beyond the derricks we strike a road the like of which we seldom see. It is a straight-away seventeen-mile stretch as unswerving as if laid out by rule. We cross the San Bernardino National Forest and arrive at last at Los Angeles and Hollywood. From Pictureland on for a distance that seems too short we traverse a chain of cities, not separated, as many towns are, by rather drab scenes, but strung out like a succession of gardens—palm and pepper trees and roses galore. The next lap of the journey finds us in the Mohave Desert. We have taken on a plentiful supply of gasoline and water to carry us through the arid region. Turning sharply off the main highway at Bannock, we whirl along to Zion National Park, a region of marvelous canyons—canyons whose side walls seem to touch the clouds. But more glorious than its heights are the colors that prevail in this land of natural temples. "El Gobernador," "The Eastern Temple," and "The Three Patriarchs" stand out as commanding features in this assembly of natural architecture.

We now double back on the Zion road to

Courtesy National Park Service

Photo by Haynes, St. Paul

"JESSE JAMES," THE HOLD-UP BEAR OF YELLOWSTONE PARK

"Jesse James" is a big black bear that shows up most any time and at any place along the park roads to "hold up" automobile tourists. He is a friendly fellow, and, whether fed or not, he greets good-naturedly each passing visitor. Accordingly, he usually gets the sweets he asks for

© Kiser Photo Co. for Great Northern Railway

ONE OF THE RESTING SPOTS IN GLACIER NATIONAL PARK

Two Medicine Camp on Two Medicine Lake—a lovely spot in the Glacier National Park, combining field and forest with lake and mountain view. Mount Rockwell looms up prominently in the picture

the main highway. At Kingman, Arizona, we come into the higher country of spruce and piñon, and at Williams into the yellow-pine belt. In a little while we reach a point where we again branch off the main road for the Grand Canyon. Where else in the world is there a sight to compare in solemn and majestic beauty to this? The Grand Canyon offers none of the restful loveliness of the Yosemite; it simply overwhelms the senses. This vast chasm, often called "The Divine Abyss," is ten to eighteen miles wide from rim to rim, more than two hundred miles long, and more than a mile deep. It is the work of the Colorado River, which cut the gorge and left standing on either side tier upon tier of huge architectural forms—veritable mountains, as we see them—exposed in great layers to the desert sun and tinted every color of the rainbow. The giant forms seem to move out from the side walls of the canyon and to float in a purple sea. We feast for hours upon its soul-stirring grandeur, then we set out for the Mesa Verde, the land of the cliff dwellers, in southwestern Colorado. In the valley of the Little Colorado River we pass Winslow, Holbrook, and the Petrified Forest, where, ages ago, giant trees were turned to stone and now lie prostrate on the ground. From Gallup, New Mexico, to Cortez, Colorado, we traverse the desert again, coming finally to the ruins of the Mesa Verde, the last vestige of a mysterious race that built their homes upon the rock ledges. The Utes who live on the reservation near the park call them "the little people"—the little people who builded in the cliffs, ages ago, lived there for generations, and vanished. From the high plateaus of the Mesa Verde we come down into the Mancos Valley by a long grade. Spinning along the foothills of the La Plata Mountains, we arrive at Durango, and later we pass the Chimney Rock House, one of the most ancient relics in this section of the country, and Pagosa Springs. Following the San Juan River to Wolf Creek Pass through a region of tall pines, we go on to Del Norte, an old Spanish settlement in the San Luis Valley. A few smaller towns; then Pueblo, Colorado Springs, and Denver—and the trip is ended. Look at the speedometer! Six thousand miles! Every mile registered has brought us untold joy, and we are immeasurably richer in knowledge and appreciation of the wonders of our Far West country.

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GUNSIGHT LAKE AND MOUNT JACKSON, GLACIER NATIONAL PARK

One of the most exquisite views to be found in Glacier National Park. High up, opposite the point of view, rises the summit of Mount Jackson, while several thousand feet below, like a gem in its setting of rock and stone, nestles Gunsight Lake

GREAT FALLS IN YELLOWSTONE NATIONAL PARK

Like a gleaming white jabot, the great falls hang from the neck of Yellowstone Canyon. Between walls tinted by nature in brilliant colors the crystal-clear water of the Yellowstone drops one hundred and twelve feet with great turbulence and foam into a pool that turns from white to emerald as the stream rushes on through the canyon

OLD FAITHFUL GEYSER, YELLOWSTONE NATIONAL PARK

This is a most successful picture of the geyser, showing it at its longest leap, one hundred and fifty feet, under a lighting of unusual vividness. Long before man fixed a unit of time Old Faithful was counting the hours through the ages. Day and night, year in and year out, this great geyser has spouted about every sixty-five minutes. Old Faithful welcomed John Colter in 1806 as the first white visitor to the Yellowstone, and never since that day has it failed a tourist

PARADISE INN, RAINIER NATIONAL PARK

One of the handsome and comfortable hostelries erected in Uncle Sam's national parks, Paradise Inn occupies a spot of unique beauty and interest, commanding on one side great slopes of flowering meadow plants, and on the other the majestic shoulders of Mount Rainier. From Paradise Inn ascents are made by various trails up the side of the mountain

Courtesy National Park Service

Photo by "Scenic America"

LOOKING ACROSS CRATER LAKE

Caldron-like and circular, seven thousand feet high, Crater Lake is perched amid the peaks. Perpendicular sides of slaggy lava rise over a thousand feet from waters of indigo blue, six miles across, and two thousand feet deep

© B. F. Loomis

Courtesy National Park Service

MOUNT LASSEN VOLCANO

Quiet for more than two hundred years, Lassen Peak exploded in May, 1914, and was in more or less eruption until January, 1916. The greatest of these occurred in May, 1915, when a superheated gas blast rushed down the valleys and uprooted forests or scorched them to a cinder—melted snow fields and flooded the lowland in rushing tides. Scientists say that nothing like that will occur again, and thousands of people now visit the park each year

Courtesy National Park Service

"CLOSE-UP" OF A GIANT SEQUOIA

Photo by Lindley Eddy

There are several groves of big trees in California—the Mariposa grove near Yosemite and the General Grant and Sequoia National Park groves. The Sequoia enjoys the distinction of fostering the greatest tree of all, the General Sherman Tree, which is thirty-six feet in diameter and two hundred and eighty-six feet high. This forest giant is the oldest and largest living thing in the world

Courtesy National Park Service

GATE TO THE YOSEMITE VALLEY

A promise of the scenic wonders to follow is given at the very gate of the Yosemite. As we climb up into the valley along the Merced River, we glimpse first Bridal Veil Falls on the right, with the Three Graces towering above, while on the left the portals of the valley are guarded by the beetling cliff of El Capitan. Far away in the center we see the tip of Clouds' Rest, the highest summit in the valley group

EARLY MORNING BESIDE MIRROR LAKE

At Mirror Lake visitors find their mountain view by gazing, not above them, but into the water. The reflection in the glassy surface of the lake is crystal-clear

Courtesy National Park Service

Photo by A. C. Pillsbury

THE HIGHEST WATERFALL IN THE WORLD—YOSEMITE VALLEY

Yosemite descends in three leaps, a total of 2,565 feet to the floor of the valley. The upper fall measures 1,430 feet, as high as nine Niagaras; the lower fall measures 320 feet, which is twice as high as Niagara

Courtesy Denver & Rio Grande Western R. R.

EL GOBERNADOR, ZION CANYON

One of the first great sights to greet the eyes on entering Zion National Park is the vast looming rock called by the Mormons "The Great White Throne"

Photo by Herbert W. Gleason

THE THREE PATRIARCHS, ZION CANYON

Photo by G. L. Beam

IN THE LAND OF THE CLIFF DWELLERS

A view in the Mesa Verde National Park, Colorado, taken from about the spot where the Wetherill brothers discovered the cliff dwellings in the late eighties. The dwelling in the rock opposite is called "Spruce-Tree House" It is about two hundred feet long and was found to contain one hundred and fourteen rooms

Courtesy National Park Service

TREES OF STONE—THE PETRIFIED FOREST, ARIZONA

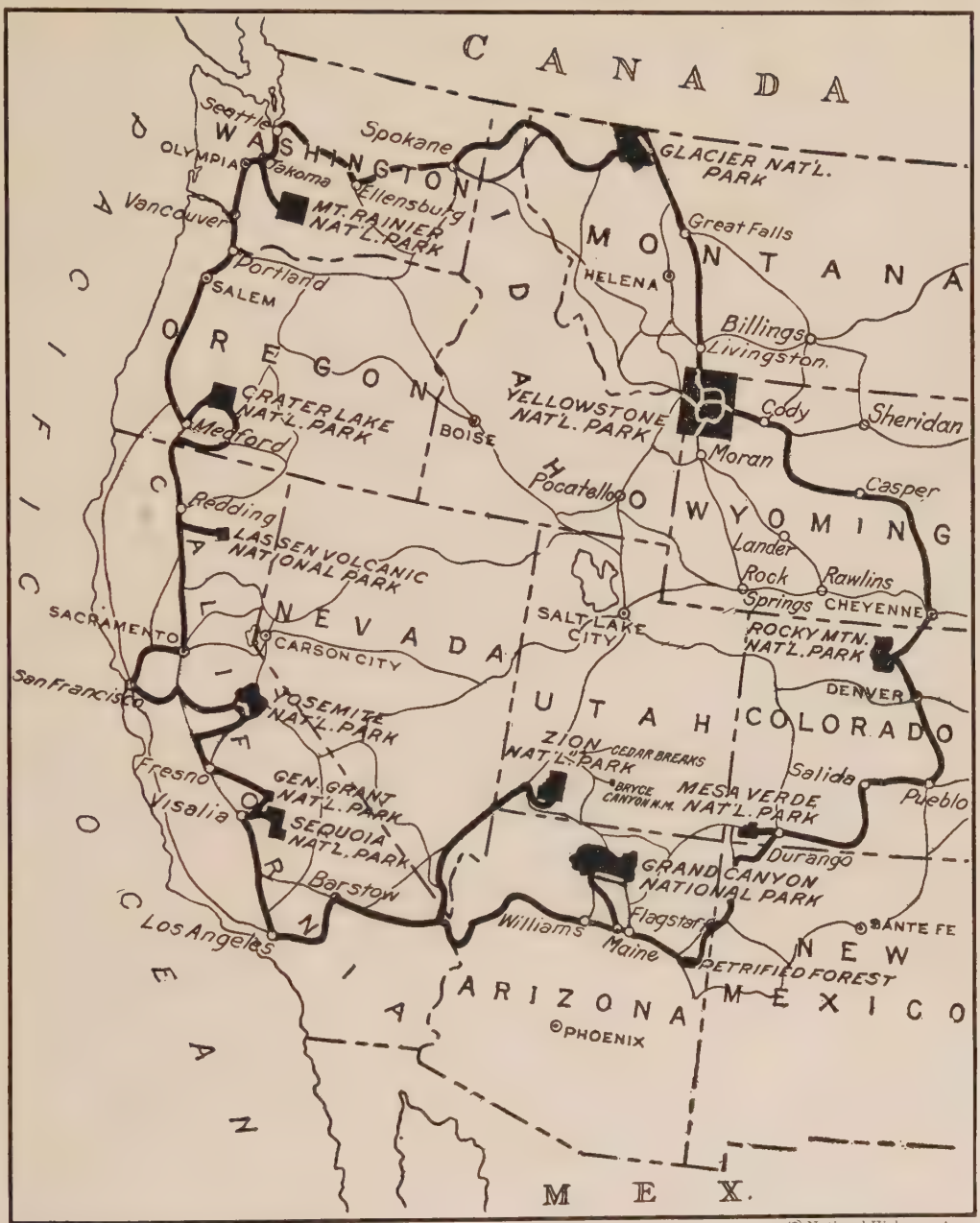
Ages before the coming of man, cosmic storms struck down forests in Arizona. A mighty sea swept over the land and buried the trees. Then, after long geological periods, during which the sea retired and nature worked its chemistry, these trees emerged as logs of stone

Courtesy National Park Service

Photo by A. F. Kales

VIEW OF THE GRAND CANYON FROM THE NORTH RIM

A very unusual view. Most visitors see the canyon from the south rim, at El Tovar, which is about opposite the point of view of this picture. The north rim may be approached from Zion Canyon or other points in Utah by automobile route. The north rim is one thousand feet higher than the south rim, so that a more extensive view is afforded from this point than from El Tovar. The canyon is about thirteen miles wide here, and about a mile deep. The length is over two hundred miles



Courtesy National Park Service, Washington, D. C. © National Highways Assn.

MAP OF THE PAGEANT RIDE, SHOWING THE PARK-TO-PARK HIGHWAY

The approximate distances between the various national parks included in this drive are as follows:

Rocky Mountain to Yellowstone	620 miles	Lassen to Yosemite	492 miles
Yellowstone to Glacier	411 miles	Yosemite to Grant or Sequoia	254 miles
Glacier to Rainier	731 miles	Grant or Sequoia to Zion	857 miles
Rainier to Crater Lake	646 miles	Zion to Grand Canyon	593 miles
Crater Lake to Lassen	313 miles	Grand Canyon to Mesa Verde	591 miles

Mesa Verde to Rocky Mountain . . . . 592 miles

THE PAINTED DESERT

BY ROGER WILLIAMS BIRDSEYE

Strange how many there are, even in Arizona, who think of the Painted Desert as a vast, vaguely defined yet compact desert mass. In reality it is nothing of the sort. Rather, it is the shallow western fringe of the plateau of the Navaho country in the northeast corner of Arizona, with extensions into New Mexico and Utah.

The lower horn of the desert's flaming crescent touches Holbrook, on the Santa Fé, the upper horn rests on the Colorado River; the outer curve is the two-hundred-mile bow of the Little Colorado and Colorado rivers between those points, the inner curve the long succession of cliffed and terraced fronts in which the lofty plateaus and mesas of the Navaho country break down to the rivers. The body of the crescent, the Painted Desert, is the narrow, highly colored desert valley between.

At Holbrook the broken walls of Ives Mesa march up to within a mile of the Little Colorado. In the northwestward sweep of the valley, for a hundred miles, cliffs and rivers are never more than a dozen miles apart. Above the glorious barrier of the Echo Cliffs the valley attains its greatest width of twenty-five miles, and in many respects its greatest beauty and fascination.

It is in this section that the tourist is most apt to get his first deep view into the glowing heart of the Painted Desert.

If it is your privilege to visit the Grand Canyon of the Colorado in spring, summer, or fall, you will not have been there long before you are advised to take the road that winds eastward along the rim thirty miles to Desert View. It is good advice, easily followed.

At Desert View you stand at the edge of the great Coconino Plateau. Before you, east and north, falls away the deepening gorge of the Little Colorado, about to join the master stream at the beginning of the Grand Canyon. Below you lies the "lofty lowland" of the Painted Desert.

From Desert View it is possible to obtain the most impressive picture of the Painted Desert with the least effort. Many other points west of the Little Colorado afford beautiful views, but they are harder to reach. In each case the lasting impression is one of soft pink, soft blue, and pearly gray. There is little hint of conditions in the painted valley itself; of its seasons, its extremes of heat and cold, its animal and vegetable life, its stinging sand storms and twisting "Desert Devils," its petrified forests and scarred and broken little canyons, its wild, black-browed summer thunder squalls, and the infinitely

NEAR MONUMENT VALLEY, ARIZONA

Many scenes like this have been devised by Nature to astound and delight the traveler who dares the lonely reaches of the vast territory called "the Navaho country"

LIKE A THEATER BACK DROP

The view from the edge of Coconino Plateau rewards a drive of thirty miles eastward from El Tovar along the rim of the Grand Canyon

varied work of wind and water in sculpturing its rough and tortured floors.

With distance much of the wonderful range of color is lost. Stand in the dead world north of the Moencopi Wash in the shimmering heat of a summer afternoon, with the sun halfway down in the west and the sky so deep it hurts: then you will know the glory of the Painted Desert, and why it cannot be pictured by words or brush or camera. About you will be the white glare of gravel and sand, the straw of bunch grass, the gray and green of sage, the yellow, orange, blue, gray, chocolate brown, and dead black of rounded, naked little hills; uncanny forms in rotting dull red sandstone against the rose bands of the cliffs.

The life of the Painted Desert is as scant as might be expected in a region where the average annual rainfall is three inches and the evaporation ten times as great. There are points where the Indians say no rain has fallen for two successive years. There are endless square miles of bare rock that grows hot as stove lids, under the smoldering heat of the sun. The soil is derived from decomposed rock. Springs are rare; sweet springs rarer still.

Even the treacherous bed of the Little Colorado is dry for weeks at a time between floods. When torrents do come they spread over the flood plains of the upper reaches and then plunge in a great red-brown Niagara over the lava barrier at Great Falls. The spray of the falls blows over the desert in a red mist.

The rains, which start in July, are short, sharp, highly localized affairs. They bluster about the country like crazy things, breaking here and there with a violence that defeats its own ends. The sudden deluge rushes from the rocky slopes, pours into the nearest sandy wash, and is gone, only a step behind the black cloud that gave it birth.

There is a fascination in these summer storms, for all their uselessness. Sometimes it is possible to see five or six in action at the same time. Stand in the full blaze of the August sun and watch one break in the valley half a mile ahead: lightning stabs the hills, thunder shakes the earth, a grayish-white pall drops from the tumbling clouds. Twenty minutes later the gray sheet seems wound back into the clouds, and the storm rumbles by. The whole valley purrs with the song of rushing water. The torrent ribbons down rock races and rips and gouges its way down slopes in deepening gullies.

Clumps of sage stand in white collars of hail. The valley floor is a racing, foam-flecked stream.

The vegetation that survives the rigors of the Painted Desert is as dry as the garden that produces it. Flat-leafed and globular cacti produce their beautiful spine-guarded waxen flowers in yellow, orange, and pink. Yuccas raise their great stems crowned with white bells. In the rainy season there are Mariposa lilies and yellow sunflowers. Wild flax, bunch grass, and sage add their tones to the great color scheme. Cottonwoods thrive along the Little Colorado and here and there along Moencopi and other washes. At Cedar Ridge the valley floor rises and there is a stunted, open little forest of cedars, scrub junipers, and piñons.

Animal life is far more restricted than in adjacent regions. Trade rats, prairie dogs, cottontail and jack rabbits, and coyotes are most common. There is scarcely a sweep of fine sand unmarked by the tiny trick-tracks of lizards or the broader wake of horned toads. Scorpions, tarantulas, and rattlers are found, but over large areas they are not very numerous. Here and there one sees a few small ground birds and an occasional duck or crane along the big rivers. Eagles and hawks are monarchs of the upper air.

The white inhabitants of the Painted Desert could be counted on the fingers of two hands. In the one-hundred-mile sweep northward from Leupp, the Indian school on the Little Colorado twenty miles below Winslow, there are but five or six persons that live within the actual confines of the desert. One is a missionary, who has lived for many years under the shadow of Echo Cliffs; three are in the family of a trader at The Gap, a dozen miles north of the missionary; another is the lone trader at Cedar Ridge, one hundred miles from a railroad. Until he acquired a tin roof he hauled his water twenty white-hot miles during the dry season. Now he catches enough in his cistern to tide him over.

The Indians shun the Painted Desert as a permanent home. Even a Navaho must drink water once in a while. Here and there a Navaho runs a few horses and cattle and bands of sheep and goats, principally northward along the base of the Echo Cliffs; and, for a few months of the year, in scattered settlements among the northern cedars, women sit at the blanket looms or work in tiny fields. Children, wild and shy as rabbits, tend the herds. Roads are few and far between in this vast and little-known wonderland, hushed in a great silence, bathed in color, abounding in forms weirdly carved by running water and wind-driven sand.

AN OASIS ON THE EDGE OF THE PAINTED DESERT

Navaho herders watering their flocks at a lonely well. The Indians are fearful of the desert itself and rarely can be induced to venture upon it

SPRING IN THE DESERT

BY RICHARD DEAN

Persons that have never crossed the deserts of the Southwest may be surprised to know that right in the midst of an arid waste is a marvelous spring which pours forth water at the rate of over a tenth of a million gallons a day. No one knows how long the wonder stream has run its course, but the earliest settlers and the Indians before them were well acquainted with it. It bears a name both strange and unrelated. The story goes that a party of ten, including a Piute Indian guide, set out on a visit to the Hopi in northern Arizona. Fearless men of adventure, they tracked their way across blistering sands and mountain trails and came at last to the spring.

Beside the rivulet they camped, and soon the conversation turned to marksmanship; one of their number was a dead shot. A wager was made that he could not puncture a handkerchief at twenty yards. Several times he fired at the calico square, hung by the two upper corners, but the force of the bullet only swept the handkerchief back without penetrating it. Stung by his failure, the "dead shot" challenged his friends to put up a pipe, declaring that he would shoot the bottom out without breaking the bowl. Up went the target, and crack went the rifle. The marksman made good his word. "Pipe Springs" the place was called from that time on.

PIPE SPRINGS STOCKADE

A stone house built near the spring in the desert for the protection of the settlers from the Indians

A few years later, Indians murdered the first white men to locate there. For the protection of future settlers, the head of the Mormon Church built, close up to the spring, a sturdy rock house and stockade as a place of refuge and defense. The Mormons named it "Windsor Castle," and in each wall they left small portholes through which to pick off attacking redskins. The little fortress still stands, but the right and title to it and the acres about it are in controversy. Years ago some Utah cattlemen took up land there, and for more than three decades they have sent their cattle to water at the spring. The cattlemen wanted to acquire patent to the land, but they could not do so until it had been surveyed; and it was not surveyed until 1917. In the meantime the government had withdrawn the land for the use of the Indians of the Kaibab Reservation, so when the cattlemen applied for patent the federal officers denied it. The case was appealed and final decision has not yet been rendered. If the cattlemen win, things will go on as they have for years. If the appeal is denied, the ranchmen must withdraw.

In the event of the latter the plans of certain public-spirited citizens who have been charmed by the historic spot may be fulfilled.

The Director of the National Park Service would like to take it over and maintain it as a national monument, for it is a scenic accent on the way from the railroad at Lund, Utah, to the north rim of the Grand Canyon—a refreshing oasis on a parching desert.

THE START OF MAJOR POWELL'S EXPEDITION DOWN THE GRAND CANYON

Major Powell is standing on the deck of the middle boat. Hillers, the photographer who took the first photographs of the Grand Canyon, is the figure holding the oars directly in front of Powell. Only two of these three boats completed the journey

PHOTOGRAPHING THE GRAND CANYON FIFTY YEARS AGO

Illustrated by the first photographs made of the giant abyss

Night dropped its curtain to form a darkroom, and the waters of the Colorado River filled the washing trays, when J. K. Hillers, a member of the second Powell expedition, which left Green River, Wyoming, on May 22, 1871, photographed and brought back to civilization the first views taken inside the walls of the Grand Canyon. Major Powell made the first trip through the canyon in 1869, but no photographs were taken.

Mr. Hillers, now nearly eighty years old, lives in Washington, D. C. He is very feeble, but mention of the Grand Canyon brings a light to his eyes and causes the memories of his hazardous trip to come back to him. Recently, he told the story of the photographs and of his work with the expedition as its photographer. He laughed at the highly magnified difficulties which the tourist of to-day has with his camera.

After the Civil War, in which he served with the artillery, Hillers worked with the Brooklyn police force until his brother became ill and had to be taken to California, where another brother lived. In California, Hillers looked for work, and his first job was driving an overland freight outfit. Then the lure of Colorado silver attracted him, and the two brothers started for the mining camps. Stopping in a Santa Fé hotel one night, they overheard, through the thin partition, a conversation in an adjoining room. It was Major Powell and the members of his party talking of their coming expedition. Hillers knocked at the door of the room, told of his need for work in order to support his sick brother, and so impressed Major Powell with his sturdiness that he was employed immediately.

E. O. Beaman, a professional photographer from New York, was with the party when it left Green River. He remained with the expedition during the first half of the trip down the Colorado, but left when the party, in 1872, started through the Grand Canyon proper. Beaman then went into the Moki country for photographic work of his own, and Hillers, who by this time had learned the operation of a camera, was appointed photographer for the expedition, and, in consequence, was the first person to photograph

CANYON OF DESOLATION

With Lighthouse Rock on the right, and the three boats of the Powell expedition moored to the bank

the stupendous walls and turbulent waters of the canyon.

Neither the dry plate nor the easily carried film roll or pack had been invented. Photographs were taken by the wet-plate process. The photographer carried as many glass plates, covered with an albuminous substance, as he had pictures to take. When he was ready to make an exposure he would coat one of the plates with collodion, which formed a film to hold the silver solution with which it was covered. This plate had to be exposed while it was wet—which gave the process its name—and developed within a few hours. After having been developed it was dried, and varnished as a protection against injury, and then carefully packed in a grooved box to await the day when prints could be made.

The photographic apparatus that Hillers used consisted of six hundred glass plates, some of them nearly a quarter of an inch thick; several cameras, one of them designed to take the popular stereoscopic pictures; quantities of collodion, silver solution, developing and fixing chemicals, and varnish. Added to these was a "crazy old dark-room," as Hillers describes it, which he made of canvas and wood after Mr. Beaman left the expedition and took his dark-room with him.

This equipment, packed in rubber sacks and canvas-covered wooden cases, was divided and stored in water-proof compartments in the three boats, "Emma Dean," named for Mrs. Powell; "Nellie Powell," after Major Powell's sister; and "Canonita." The "Nellie Powell" was abandoned at the end of the first season, and only the "Emma Dean" and "Canonita" made the trip through the Grand Canyon proper.

"During the day I would take my pictures, and when night came and the boats were tied by the river bank, I would get out my dark-room and chemicals and develop the plates," said Hillers. "Sometimes there would be enough light from a wood fire on the bank reflected down to the water to permit me to work. When there was no place to build a fire, someone would hold a lantern back of the light opening, and I would poke my head under the canvas and get to work. I missed a lot of sleep this way. When the water in the Colorado was muddy, we would

THE FIRST CAMP ✣ The wet-plate negatives from which the photographs illustrating this article were printed were developed in the dark-room mounted on the tripod at the right

ROUGH GOING ✣ **Lava Falls in the Grand Canyon, showing some of the water through which the expedition passed. Major Powell was the first white man to traverse the entire length of the canyon. Nothing was known of the course over which the expedition was to travel, so that each bend and turn was a source of anxiety**

MAJOR POWELL'S BOAT ✣ ✣

Powell had lost his right arm at the battle of Shiloh. In spite of this handicap, he shared all the dangers of the expedition. He sat in the armchair lashed to the deck of the boat, so as to view the canyon to better advantage

watch for a clear stream emptying into the river and then get a few bottles of fresh water for some of the finer work."

In 1869 Major Powell headed a party of nine men who traveled in four specially constructed boats. The expedition of 1871 was undertaken to make scientific investigations which were rendered impossible during the first trip because of loss of instruments in capsizings.

Major Powell, while directing the fire of his battery at the battle of Shiloh, was struck in the right arm by a rifle bullet and this necessitated amputation below the elbow. This handicap did not prevent him, Mr. Hillers said, from performing his share of the work and facing all dangers with the remainder of the party. In order to make him more comfortable and to enable him to view the river to better advantage, an armchair was strapped to the deck of one of the boats as a seat for Powell.

Early in September, 1872, the "Emma Dean," in which Powell was riding, capsized, and both he and Hillers were sucked down in a whirlpool. Powell was almost drowned; and was saved only because he wore a life preserver and Hillers happened to be near enough to help him back to the overturned boat.

The expedition reached the mouth of Kanab Canyon on September 8, 1872, and was met by a pack train. The two boats, which by this time seemed like members of the party, were abandoned, and the party left the Colorado, going by pack train up the Kanab.

Despite the difficulties under which Hillers worked, the photographs taken by him are still regarded by government photographers as equal to those taken later and under more favorable circumstances. The photographs reproduced herewith were printed recently from the original negatives, which have been in the files of the United States Geological Survey for over fifty years.—*E. B. Swanson.*

VALLEY OF DEATH AND PROSPERITY

BY C. F. TALMAN

Death Valley, in southern California, earned its sinister name in the middle of the last century, when an emigrant party went astray in its dreary wastes and most of the members perished miserably of thirst. At the present day Death Valley is a center of active life, and a source of great wealth. Vast mineral resources are there, only partly exploited.

Death Valley is the lowest bit of dry land in America, nearly the whole of it lying below sea level and having an extreme depth of about four hundred feet. This depression of the land is the more remarkable because one of the lofty mountains by which the valley is bordered rises nearly 11,000 feet above the sea, while only eighty miles away is Mount Whitney, which, with an altitude of 14,500, is the loftiest peak in the United States.

In summer it is the hottest and driest spot in the world. It seems strange that the world's "record" for high temperature should be held by a place more than thirty-six degrees north of the equator, yet this distinction belongs to the little Weather Bureau station in Death Valley, located in latitude 36° 27' N., about the same latitude as Norfolk, Virginia! An extreme reading of 134 degrees Fahrenheit was registered here on July 10, 1913, by an accurate thermometer enclosed in a standard wooden screen and therefore recording "shade" temperatures. This is seven degrees higher than the highest ever recorded, with the same precautions, anywhere else in the world. Moreover, the Weather Bureau station is by no means in the hottest part of the valley. The dryness of the air is equally remarkable; periods of six consecutive months without rain are not uncommon; and a day without sunshine is almost unheard of. The air is not generally stagnant, but is stirred by hot blasts. Wonderful mirages and whirling dust storms are features of this region.

Death Valley has become world-famous for its unlimited stores of borax. For years the product of the mines was hauled out of the valley by long trains of mules. The mules are now obsolete; a narrow-gauge railroad hauls the ore to-day. The borax (colemanite) occurs in beds, partly beneath the surface, varying in thickness from a few inches to a hundred feet. It is mined by means of shafts and tunnels.

One of the most surprising features of this "valley of death" is Greenland Ranch, a fertile tract of some sixty-five acres, which has been brought under irrigation and produces four crops of alfalfa every year—a refreshing sight in the desert.

THE JAWS OF THE VALLEY OF DEATH

Where lone graves of unknown men abound. During the gold rush of '49, all but four or five of an emigrant train of fifty perished from heat and thirst in the valley. Ten years later a prospecting party stumbled on the emigrants' last camp. Lying about were wagons, rifles, kettles, and even children's toys

BIRGER SANDZEN: PAINTER OF DESERT AND PRAIRIE

BY VERA BRADY SHIPMAN

An elm-shaded back-yard studio in a Kansas town is the workshop of Birger Sandzen, a Swedish painter who has spent practically all his art life striving to interpret the American West. He was born in Bildsberg, Sweden, in 1871. His father was a Lutheran minister. He studied with Zorn and Bergh in Stockholm, and then entered the class of a French master. Thirty years ago Sandzen became interested in America through meeting some American art students in Paris. When he was offered the directorship of the art department of Bethany College, in the little town of Lindsborg, Kansas, he accepted with enthusiasm. To him, more than to any other one person, credit is due for having brought up Kansas in the way she should go artistically. Working in the heart of a Swedish farming district, he has organized exhibitions and carried on a consistent campaign to further popular appreciation of prints, paintings, pottery, and other objects of beauty. He is also a writer and lecturer on art subjects. His own pictures frequently are sent on tour to towns of western states. Altogether he has produced over five hundred paintings and drawings of the West and Middle West. In some communities Sandzen permits dealers to sell his paintings, lithographs, and woodcuts on installments, and on the living-room wall of many a prairie farmhouse hangs an example of his work that has been bought with the housewife's egg money.

SVEN BIRGER SANDZEN
At the door of his "back-yard studio," Lindsborg, Kansas

Prairie skies, desert rocks, wide color expanse, Sandzen has mirrored upon canvas. His summers are often spent in and near Santa Fé, New Mexico, with extended trips into the surrounding country. Color ranks first as a medium of Sandzen expression. His color combinations are daring. Vermilion is in his sunsets. His desert high lights demand exacting tribute of lesser shadows. Originality and personal advocacy of the school of impressionism, of which the Swedish-American artist was an early recruit, have placed his canvases, after years of struggle for recognition, in representative galleries of art in the United States and in his native country.

Sandzen is a poet-painter of sun-bathed spaces, of shifting rainbow sands, of canyons and tumbling streams. He has memorialized the relics of vanished tribes, the ruined cities of a prehistoric race, the vistas of a primeval land. This painter from over the sea believes that the surest road to the achievement of an individuality that has universal appeal is the study of national subjects. With skillful technic at his command in a variety of mediums, he creates pictures of strength and beauty, and performs a high mission as well: the propagation of the national idea in American art.

"ARIZONA" LANDSCAPE"

Courtesy Ralph Smalley

"DESERT HORSES"

Two lithographs by Birger Sandzen

THE WHEELER NATIONAL MONUMENT

A Rock Pageant of Barbaric Beauty

BY FRANK D. HOPLEY

In the State of Colorado, on the southern slope of the Continental Divide, Nature has staged a pageant of rock forms barbaric in its splendor. Officially, the spectacle, which covers an area of over three hundred acres, is designated as Wheeler National Monument. From north to south the reserve is traversed by deep canyons whose sides rise sheer toward the sky. Pinnacle-like rocks, capping the intervening ridges, make the tract impassable from east to west.

Ages ago outpourings of lava, accompanied by showers of volcanic ash, piled up on this spot, and left a series of nearly horizontal strata of varying degrees of hardness.

Quick-rushing streams have cut and sliced through the rock formation, leaving winding canyons, broken ridges, and buttes of strange beauty. The rains have worn and chiseled rocks of many tons' weight until they have become fluted columns, or have been cut apart and strewn around as pebbles. The frost has split open huge boulders of the softer strata until they hang like enormous icicles, white and glistening in the sun.

To reach the monument it is necessary to make the trip on horseback from Wagon Wheel Gap or Creede, Colorado, to the Rio Grande National Forest. As the monument is approached, the tourist passes through a veritable topsy-turvy land.

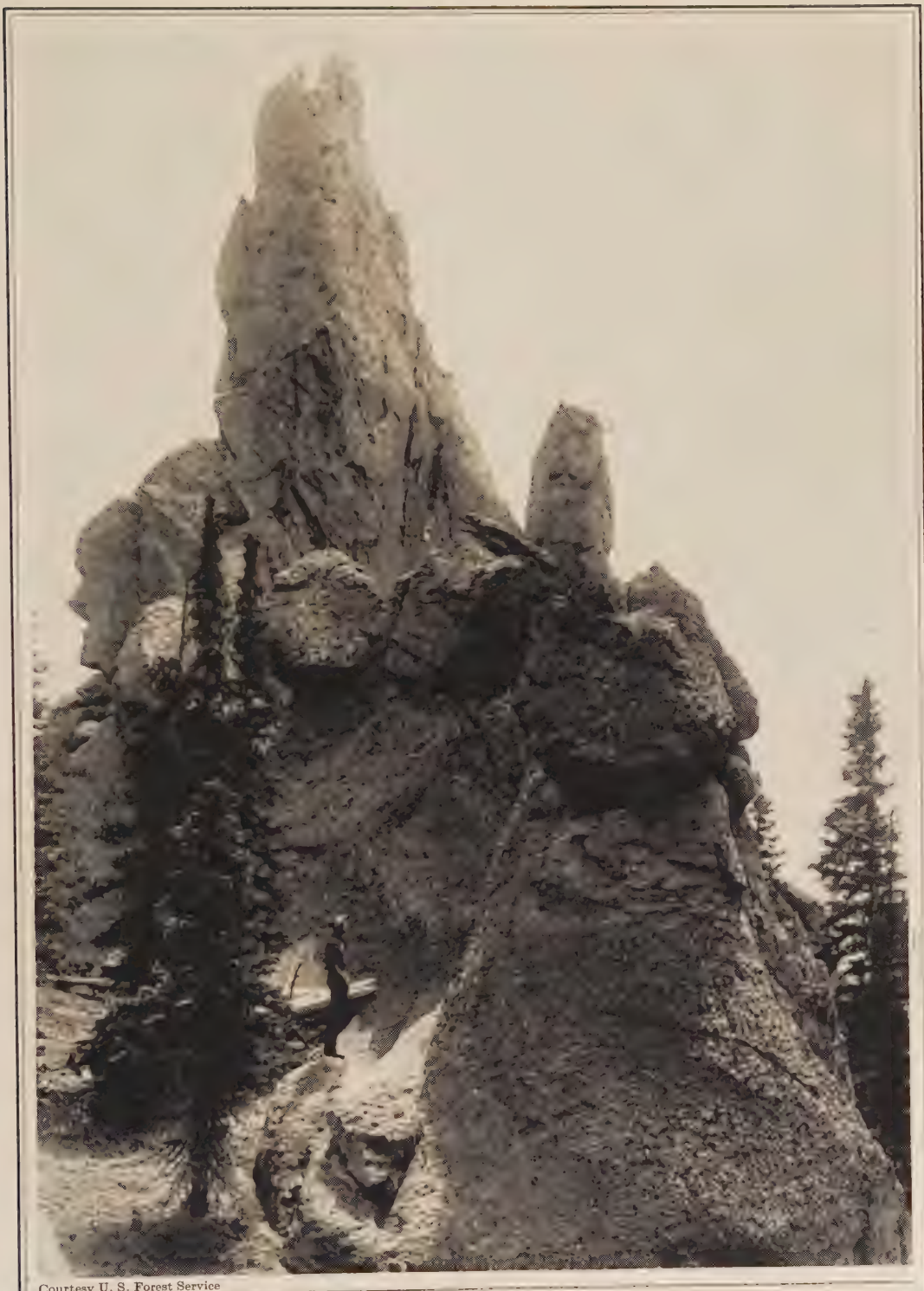
Up Echo Canyon are piles of grayish rocks fluted in such a manner as to suggest the name "The Organ"—an instrument of stone through whose great pipes the wind, for centuries, has swelled its symphonies to the accompaniment of rain sweeping its silver patter against the side of the canyon.

Throughout the great tract children of the lava dust are everywhere, while the tall evergreens, like giant guards, cast their dark shadows upon the precipitous cliffs.

Here in 1848 the ill-fated expedition of John C. Frêmont met with disaster. To this day, parts of the skeletons of mules and bits of harness and camp equipment are to be found there, grim reminders of the struggles of those early pioneers.

Courtesy U. S. Forest Service

"THE GHOSTS" Huge masses of lava, rising tall and stately above the trees, so formed by years of erosion as to suggest an army of phantoms in their white robes



Courtesy U. S. Forest Service

"FINGER ROCK" ✣ One of the many strange shapes found in the canyon. Its towering structure of stone rises boulder upon boulder in such a shape that the mass of rock resembles a human hand with the forefinger pointing skyward

SOROLLA: PAINTER OF LIGHT AND LIFE

BY WILLIAM STARKWEATHER

To those who knew Sorolla well the news of his death late in the summer of 1923 seemed strangely unbelievable, even though the mind had been prepared for it by the artist's lingering last illness. Sorolla had one of those personalities that are difficult to associate with death. Until his illness he was extraordinarily active; he burned with energy; he found the world exciting and lovely, and living a delightful affair; he lived indeed with enormous gusto.

The immense success of his exhibitions aroused interest in his personality. He was a short, thickset, somewhat swarthy man. His thinning hair and his beard were iron-gray. His ruddy face had a faint suggestion of the Japanese on account of the setting of the eyes. He made an impression of robust vigor. It is notable that Sargent, Zorn, Besnard, and Sorolla, masters in their own countries of the same type of broad realism presented with phenomenal manual dexterity, have all been men of vigorous physique.

SELF-PORTRAIT OF SOROLLA

Given by the artist to his pupil and friend William Starkweather. Reproduced here for the first time

In character Sorolla was exactly like his work. Pictures as spontaneous, as sincere, and as rapidly executed as his are certain to be a statement of their author. He was brilliant, forceful, enthusiastic, and determined; full of ambition to express himself, to create, to be somebody. His joy in the beauty of the world never dulled; he was always the child seeing its first butterfly. He had struggled up from poverty and knew his world, was shrewd and astute rather than thoughtful or contemplative, clever rather than profound or analytical; he lived somewhat on the surface of things. Occasionally, however, he surprised one by the analysis he showed in talking on some art topic, such as the painting of Velasquez. He was a pleasantly noisy person; there was a cheerful hubbub wherever he went. He hated sadness and sad people, enjoyed the theater, vaudeville, and moving pictures, but never attended bull fights. He was a tremendous worker, during most of his career painting about eight hours each day. He kept his life simple, in Spain hardly going out and rarely doing any official art work such as service on art juries. He well nigh reduced his schedule to eating, sleeping, smoking, and painting. The mad hurly-burly of his American tours, in which he played his part well, was as unlike as possible his life in Spain. Despite his brilliance and fire he was rather a cold man; his early struggles may have made him so. His somewhat cold and exterior point of view, with a lack of contemplative analysis, resulted in his portraits being of less interest than his outdoor pictures. For art in general and for his own art in particular he burned throughout his life with fervent zeal. Endowed with great gifts, operating on a tremendous scale, filled with desire for self-expression, racing toward glory, he was a splendid spectacle.

Born in Valencia in 1863, the early life of Joaquín Sorolla y Bastida was difficult. In youth he was aided to some extent by Señor Garcia, a kindly portrait photographer of

In the Metropolitan Museum

"THE SWIMMERS," By Joaquin Sorolla y Bastida

Sunlight and happy children were the Spanish painter's favorite themes. He got his effects quickly and painted with amazing facility. "The Swimmers" was completed in four afternoons

Valencia, whose daughter Sorolla afterward married. This happy marriage with a companion of kindly nature and of a highly intelligent and subtle mind was often stated by Sorolla to have been one of the most important factors in his success. An early trip to Italy proved fruitless, but the study of works of art of Bastien-Lepage and Menzel which he saw in Paris ripened his genius.

Of sincere artists, only those make money whose natural style accords with the taste of their time. Sorolla grew to manhood in the last period of the realistic movement, which started in 1830. It was the epoch when men proclaimed themselves painters instead of artists, the day of intense realism and mad brushwork, the period that produced Sargent and Zorn. He rose swiftly to celebrity, was loaded with honors and rewards. Already well-to-do when he arrived in America, it is an open secret that he gained nearly a quarter of a million dollars from his first American tour and another considerable fortune from his second tour. His New York exhibition, held at the Hispanic Society building under the direction of Archer M. Huntington, was the greatest triumph of his career. The attendance rose from 88 the first day until the final Sunday of the exhibition, when 29,462 persons packed the building. On one occasion Sorolla himself had to go in through the cellar, as there was no such thing as getting through the front door.

It has been stated that Sorolla employed photography in his work. This is not true. A personal note in this article may probably be pardoned if it is used to add emphasis to this denial. I worked beside him for several summers and saw him execute, entirely without photographic aid, many scores of his pictures, among others "The Swimmers" in the Metropolitan Museum. Of all his pictures this is the one that might most suggest the use of photography. But it was painted only from living models, six boys being employed. Three swam around and around before the rock on which Sorolla painted, while three rested and dried them-

selves in the sun. The picture was painted in four afternoons. Those who make the photography claim simply do not realize the speed and surety of his painting. When in America many students were eager to see Sorolla paint. But, unless the observer was very much awake, very analytical and already knew a great deal, there was nothing to be learned; the picture seemed simply to appear on the canvas. His range was enormous. He was thoroughly trained and was not a one-picture artist. He could paint and draw anything he saw that interested him. He adored Whistler, admired Sargent, and said so. He sat to Zorn for his portrait. Before Boldini's "Portrait of Whistler" in the Brooklyn Museum he said, "Boldini! At his best he knows more than all of us." He disliked Zuloaga's work. He considered his rival's pictures to be insincere concoctions, built of the lumber of old Spain, maligning Spain today, and fabricated solely with an eye to French taste and French criticism.

AT ST. LOUIS—1911

To pass time while awaiting a train, Señor Sorolla, his wife, and Mr. Starkweather posed for this amusing post-card picture

Art styles constantly change, and no artist is apt to last in fashion more than twenty years. But all critics agree that Sorolla has a secure place in the history of art. The real beauty of his work, its superb execution, its clarity and sanity, its value as a panorama of Spanish life in his day, all give it lasting value.

Sorolla greatly dreaded death. He once asked a friend if he believed in a future life. The friend replied that in whatever other way a man might live after death, it was certain that he lived in what he had done, and that this was particularly apparent in the case of an artist of real power, whose thoughts, enthusiasms, and aspirations would remain forever alive in his pictures. Sorolla seemed to find satisfaction in the thought. He is dead and in his Valencian grave, but it is true that his soul lives in his paintings of color and sunlight, of brilliant beaches and orange groves, of fishing boats, of dark-eyed women in native dress, of playing children, of all the myriad of beautiful things which he painted beautifully and left as a superb legacy to mankind.

THE BEACH AT VALENCIA

Sorolla often set his easel on the sands and posed his models against a background of sea and sky

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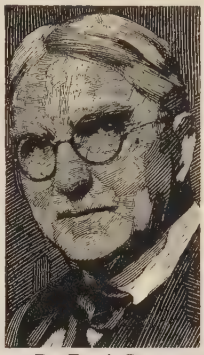

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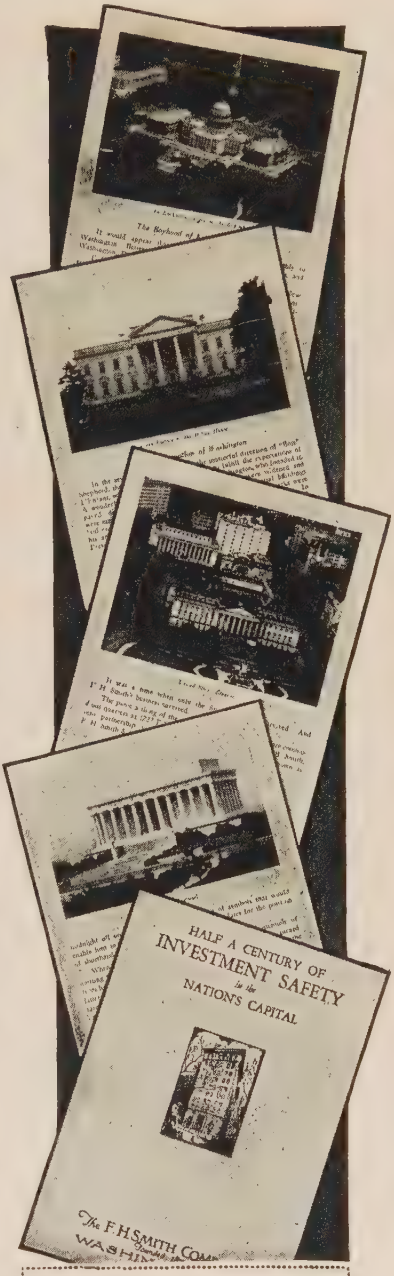

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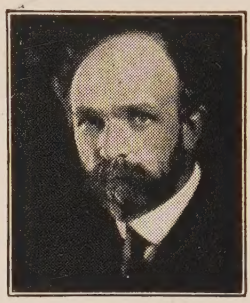

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THE OPEN LETTER

WHY do we not use camels for transportation across the American deserts? One may say that the question has been answered, for the present at least, by Henry Ford. A light-weight autocar covers the desert wastes quicker than a camel—and carries more. There are many autocars on the American deserts to-day. From a window of the California Limited, when crossing the Mohave hot sands, I have seen "flivver" cars a mile or two away skimming along straight through a perfect desert mirage!

But why did not the pioneers of the "covered wagon" days use camels? All through the years of toilsome overland traffic, horses, mules, and oxen perished miserably under heat, thirst, and exhaustion. Camels are beasts of burden fit for the desert, and centuries of experience in Arabia and on the great Sahara have proved their efficiency. Why, then, were not the old emigrant trails and stage-coach routes worked with camels?

It is probable that very few know that the experiment *was* made: camels *were* tried out on the American deserts.

About 1855, when Jefferson Davis was Secretary of War, thirty-two of these beasts were imported from the Sahara, and distributed from San Antonio to El Paso, Texas. A year later, a second cargo of forty head arrived; then the deserts of New Mexico and Arizona knew camels. Some time was allowed for acclimatization, during which only two camels died.

A first test was made near San Antonio. Two wagons, with a combined load of 3,684 pounds, each wagon drawn by six big army mules, made sixty miles in four days. Six camels carried the same load the same distance in two and one-half days. Other tests followed, under what were considered very unfavorable conditions—mud and rain—and yet the camels always appeared to great advantage. Forty more camels were imported.

Summer came; the rains ceased; a drought and hot winds set in. "Ideal camel weather!" said the camel experts. And, for a time, camel caravans were passing wagon trains in great shape. The camels needed little forage, practically no water, thrived in high temperatures, and could transport greater burdens than the mules, which must have both grain and hay, and were usually maddened with heat and thirst. But when the drought continued, the ground cracked open, and a hard crust formed on its surface. Now the wagon trains began to pass the camel caravans—the camels resting on leathery knees.

Soon, even the most optimistic of the camel experts had to admit that camels would never do for American use. From Texas to Arizona the soil is impregnated with small, sharp rocks. In dry weather these rocks literally tore the soft, gristly pads of the camels' feet to pieces. "Tenderfeet!" the mule-skinners dubbed them.

After this the camels were herded in Arizona. But they were of no use, and gradually their herders became careless, and the camels wandered away. For years, excited cowboys and prospectors came into the settlements of the Southwest with reports of seeing a strange prehistoric species of animal. Now all the camels have disappeared.

W. D. Moffat
Editor

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